Transf.
Nelson
6-24-36

COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance

Reg. U. S. Pat. Off.

Acceptance under the Act of June 5, 1934, authorized December 18, 1934
Published monthly

Vol. L Philadelphia, February, 1936 No. 6

EDITORIAL DEPARTMENT

JULIAN CHASE, *Directing Editor*

GEORGE T. HOOK, Editor

STANLEY GERSTIN, Managing Editor — HENRY JENNINGS, Technical Editor — GEOFFREY GRIER, Art Editor

HAROLD E. GRONSETH, Detroit News Editor — JOSEPH GESCHELIN, Detroit Technical Editor

EDITORIAL CONTENTS

Copyright 1936, by Chilton Company (Inc.)

FEATURE ARTICLES

Bleeding Boosts Heat and Burns Out Tire Life..... 12
The Best Test of An Oil is Engine Wear..... 14
The Verdict of Radio's Traffic Judge: Truck Drivers Are Tops 16
The Public Be—Saved 18
Will Shippers Invoke Sanctions?..... 19
Striping 20
The Album 24
How To Adjust Chevrolet's Hydraulics..... 26
Speedometers Go Round and Round 27

DESCRIPTIONS

Skinner Filter for Diesel Engine Fuel..... 29
Evans Unit Converts Gas Engine to Oil..... 29
GMT Struts Style and Pares Prices for 1936..... 30
Mack Makes History With a Junior Line..... 32
Stewart Lists ¾-Ton at $545..... 34
'The Berries' for Berries 35
Hydraulics Are Feature of 1936 Chevrolet Line.... 36
Flexible Ventilator Fits Any Cab..... 38

DEPARTMENTS

The Overload 9
Ears to the Ground 11
After Hours 22
New Truck Registrations by Makes by Months..... 38
New Products on Parade 40
News 44
Commercial Car Journal Truck Specifications 53
Free Money Makers for You 115
Advertisers' Index 130

C. A. MUSSELMAN, Pres. and Gen. Mgr.; J. S. HILDRETH, Vice-Pres. and Manager; W. I. RALPH, Vice-Pres.; G. C. BUZBY, Vice-Pres.

OFFICES

Philadelphia—Chestnut & 56th Sts., Phone Sherwood 1424. New York—239 W. 39th St., Phone Pennsylvania 6-1100. Chicago—Room 916, London Guarantee & Accident Bldg., Phone Franklin 9494. Detroit—1015 Stephenson Bldg., Phone Madison 3090. Cleveland—609 Guardian Bldg., Phone Main 6860. San Francisco—444 Market St., Room 305, Phone Garfield 6782. Long Beach, Cal.—1595 Pacific Ave., Phone Long Beach 613-238.

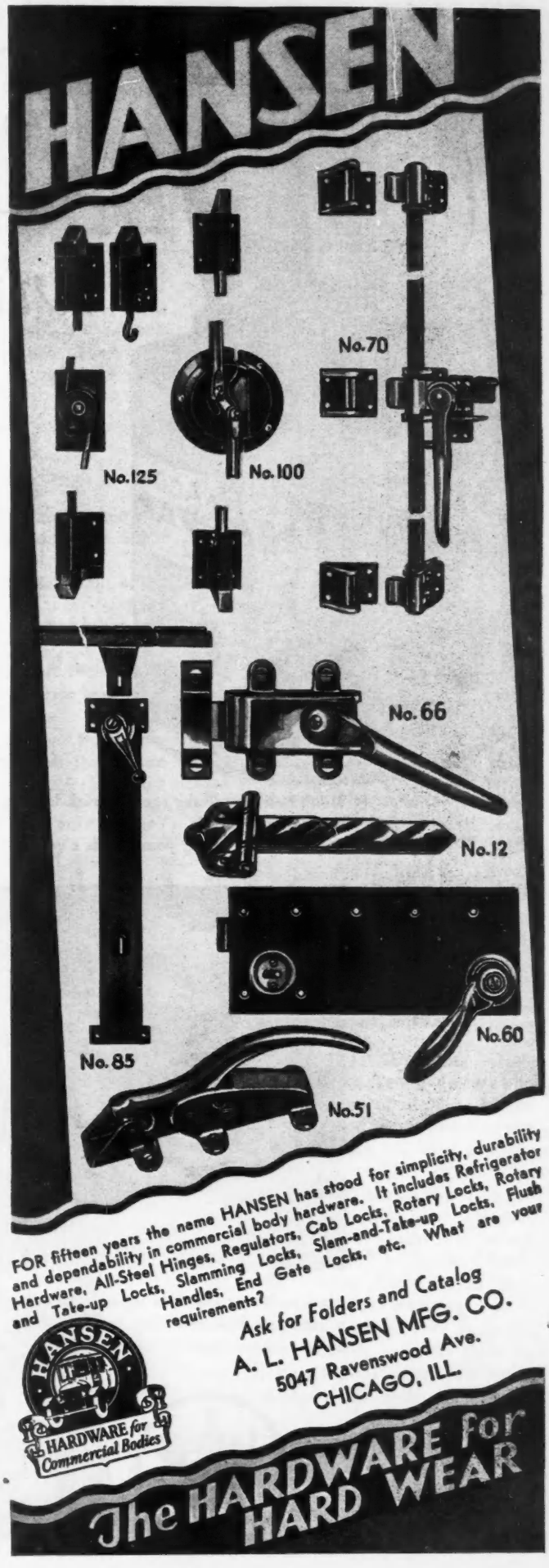
SUBSCRIPTION RATES: United States and United States Possessions and all countries in the Postal Union—$2.00 per year. Canada and Foreign—$3.00 per year. Single copies—25 cents.

Owned and Published by

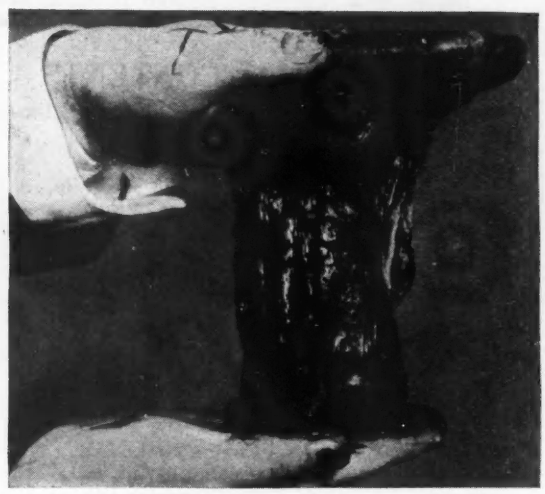
CHILTON COMPANY
(Incorporated)

Executive Offices
Chestnut and 56th Streets, Philadelphia, Pa., U. S. A.

C. A. MUSSELMAN, *President*
FRITZ J. FRANK, *Executive Vice-President*
FREDERIC C. STEVENS, JOSEPH S. HILDRETH, GEORGE H. GRIFFITHS, EVERIT B. TERHUNE, ERNEST C. HASTINGS, *Vice-Presidents*, WILLIAM A. BARBER, *Treasurer*. JOHN BLAIR MOFFETT, *Secretary*

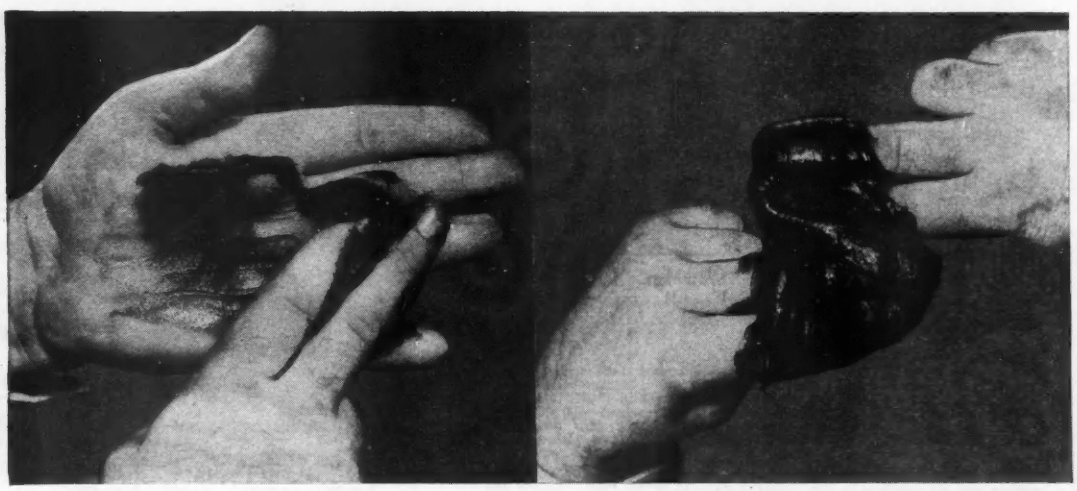

HANSEN
No.70
No.125
No.100
No.66
No.12
No.60
No.85
No.51
FOR fifteen years the name HANSEN has stood for simplicity, durability and dependability in commercial body hardware. It includes Refrigerator Hardware, All-Steel Hinges, Regulators, Cab Locks, Rotary Locks, Rotary and Take-up Locks, Slamming Locks, Slam-and-Take-up Locks, Flush Handles, End Gate Locks, etc. What are your requirements?
Ask for Folders and Catalog
A. L. HANSEN MFG. CO.
5047 Ravenswood Ave.
CHICAGO, ILL.
HANSEN
HARDWARE for Commercial Bodies
The HARDWARE For HARD WEAR

Compare with any grease



Don't hesitate to take some Marfak in your hands and test it yourself. (You can wipe it off with a paper towel, leaving your hands clean).

Note how far you can stre-e-e-tch Marfak due to its cohesive body. *Compare* this with some "yellow" grease and see what happens.



An even better test is to smear a little Marfak on a glass-top desk and then try to squeeze it off again. Compare with any grease you have ever used.

In a grease-type universal, centrifugal force throws off most greases more readily. Marfak has film strength . . . *load carrying* strength, because it contains high grade, dewaxed cylinder oil.

TEXACO

COMMERCIAL CAR JOURNAL Vol. L No. 6 FEBRUARY, 1936

The Overload

So We Gang You . . .

MANUFACTURERS ganged up this issue with new announcements. In our lap, where they were dropped at practically the last minute, we find such assorted offspring as Mack's announcement of its Junior line, GMT's galaxy of stars for 1936, Chevrolet's purposely delayed details of its hydraulic-braked truck line, and Stewart's one model addition. Besides the small items you'll find news of Fruehauf's new refrigerated semi-trailer, Skinner's filter for diesel fuel, Evan's gas to fuel oil converter and Nichols Lintern's replacement cab ventilating system. All interesting.

. . . And Point a Finger

THERE'S variety in the general articles. There's no point in itemizing them here. Leaf through and they'll speak for themselves. Some of them may even yell at you, as for instance the article that puts the taboo on tire pressure bleeding. One of them will even blare at you—with all three valves pushed down. That's the one on the speedometer goes round and round and the mileage figures come out heah—but oh how cockeyed. Then there's a lubrication article that started as a piccolo solo and wound up as a military band with captains, colonels and privates participating. For human interest there's the one about the radio traffic judge whose verdict favors truck drivers.

Specifications Note

WE make a point of mentioning here that complete specifications appear in this issue. Some readers seem to be unaware that specifications are now published complete every other issue instead of quarterly. While on the subject we call your attention to a new column in the table. It comes under Brakes-Service and gives the Drum Area. The Lining Area column is preserved. If the Drum Area column is spotty remember that it's an innovation and that a little time must be allowed for some of the boys to catch on.

Bonus for Babies

CONGRESS may decide to pay the soldier's bonus with baby bonds, but out on the West Coast there's a truck operator who has decided to pay his employees a bonus for babies. It makes a piker of Mussolini. The bonus is $100 per offspring.

The truck in the picture may look like a pee wee beside the 14-story high shovel in use at the Bobolink strip coal mine at Seelyville, Ind., yet this special White Model 691-SD420 is a 25 to 30-ton tractor-trailer. The tractor has six wheels, is a four-wheel drive powered by White's Model 5A six-cylinder engine developing 140 hp. Austin-Western Co. built the trailer. The entire unit weighs 40,000 lb.; is 40 ft. long, 104 in. wide and 101 in. high. The trailer holds more than 33 cu. yd. of coal

The firm has 125 employees and, we hear, the line is already forming. It's a story that we wouldn't miss giving you for all of Ethiopia, so look for it in March.

A Modern Prospector

UP in Alaska there's a General Motors Truck dealer who picks prospects out of the air. It's so hard to get around in that part of the world that he makes his wider contacts by means of a weekly private radio broadcast through the facilities of the local station at Anchorage. Recently his broadcast about trucks was picked up by a prospect in the Aleutian Islands out in the Pacific. There are no territorial restrictions way out thar, stranger, so he's going out to make the sale. He's probably half way there by now and no wolves (short for one's competitors) at his heels.

Sick Bulletin

OUR monthly table of new truck registrations is back to normal again. Maybe you were one of

It's daylight in the night time when the fleet shop is equipped with Westinghouse high intensity Mercury lamps. They give a pleasant color quality which makes it easy on the eyes of repair men in the garage of the Jersey Central Power & Light Co., Morristown, N. J., where line trucks are serviced during the night

THE OVERLOAD

those who hadn't noticed that the figures were a bit off their feed. Well they were. The slight statistical indigestion was brought on by the inclusion of bus registrations. Somebody had persuaded the compilers of the registrations that a bus was a commercial vehicle and therefore belonged in a compilation of commercial car figures. We helped to talk them out of the idea and the statistics were given a laxative treatment. The blemishes (minor because not many buses are sold annually) are removed in the revision now published.

A "racy" idea has been applied to the trucking operations on the huge Coulee Dam project. White trucks doing the dirty work there have been named after famous race horses owned by Horsewoman S. B. Mason. This one is "Head Play." We know of an old jollopy that ought to be called "Minnie the Moocher."

Bonus for Safety

VITAL statistics are one bonus basis and safety statistics another. In the case of South End Express Co., Montclair, N. J., safety statistics entitled 21 drivers to a bonus of $100 from President Louis Kramer. Each had a perfect driving record during 1935. Six other drivers with minor accidents received $50.

Safety in a Sentence

OUT in St. Louis the Columbia Terminals Co. gave Driver Anthony Schwartzbach a gold watch and $25 for driving 10 consecutive years (120,000 miles) without an accident. 229 other drivers got $25 each for no accidents in 1935. Schwartzbach explained his record simply: "I never drive too fast for the prevailing conditions."

Cockeyed? Sez You!

THE eye sometimes has the strange habit of seeing things that ain't. That's what happened in the case of a caption writer who gave the Buda-Lanova diesel a 14:1 compression ratio on page 30 of the December issue when the article, on page 32, specifically stated 12½:1. The latter is correct.

Transcontinental Tid-Bit

WE have an eye-witness account of the tractor-trailer test from Chicago to Los Angeles and back by Keeshin Transcontinental Freight Lines and a number of interested manufacturers. We tried to get it for this issue but it just missed our dead-line which we adhere to with a tolerance resembling .0005. We promise it to you in March. Meanwhile nibble on these stray bits of statistics. The five tractor-trailer units, each carrying 18,000 lb. of merchandise, made the round trip of 4894 miles in 223 hr. The lowest oil consumption figure was 7 qt. and the highest 40 qt. The best mileage per gallon was 5.89 and poorest 4.78.

Leap Year Propositions

WE'VE just a few free offers this month but all are highly desirable. One is a 16-page booklet that tells all about wheel alignment and rear wheel tracking in a few words and a few pictures. Another is a 36-page book on "How to Service Clutches." Then there's a wall chart that gives every step in refinishing a truck in either lacquer or synthetic enamel; tells how to prepare old surfaces for painting, and gives the answer to paint job failure. Use pen or pencil on the coupon nearby.

Brush Up on Collisions

THE foregoing reminds us to mention a book which all operators and highway officials interested in safety should have. It is "Collisions in Street and Highway Transportation," published by Dorrance & Co., Philadelphia, price $3. The book is a forward-looking attempt to give definite answers to the multitude of separate problems met in providing safe transport in cities and upon highways. It has a decided reference value and, for that reason, it is a pity that the binding is not a bit more sturdy.

Chesterfieldian Chauffeurs

TRUCK drivers are getting well-deserved recognition as "Chesterfields of the Highways." Addressing the SAE at Detroit Dr. Miller McClintock, director of Harvard's Bureau of Street Traffic Research, averred that the average motorist could take lessons in highway manners from truck drivers who "now are the gentlemen of the road." The educational efforts of fleet operators are apparently beginning to tell.

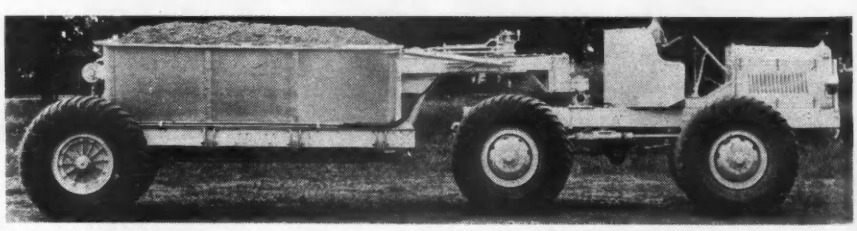
FREE

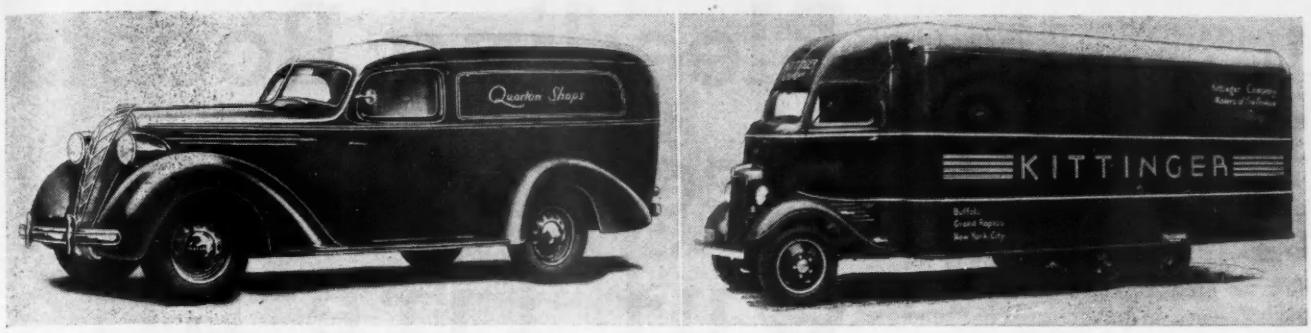
It's leap year, so leap, check and mail to
The Editor, Commercial Car Journal, Philadelphia, Pa.

- ☐ **A—Wheel Alignment Booklet (16 pp.)**
- ☐ **B—How to Service Clutches (36 pp.)**
- ☐ **C—Painting Wall Chart.**

Name .....
Title .....
Firm Name .....
Address .....
No. Trucks Operated ..... **No. Cars** .....

Oshkosh built this special earth remover four-wheel-drive tractor for tough going. It is equipped with air brakes and air steer on all four wheels and is powered by a Hercules 128 hp. engine. The turning circle of the tractor is 24 ft. and of the entire unit 29 ft. The tractor is capable of making approximately 40 miles an hour





Above—This smart-looking ¾-ton panel delivery, sporting the 1936 passenger car front-end, is Terraplane's contribution to the commercial truck field. There are six models in all. Wheelbases are 115 in. Hydraulic brakes are on all models. Right—Special cab-over-engine truck equipped with Truxmore third axle. Body was designed by Transportation Engineers, Inc., for a standard Ford chassis and is 20 ft. inside. Entire unit weighs only 9400 lb. The third axle with its gravity spring suspension assures Kittinger's furniture a jolt less ride

Ears to the Ground

INFORMATION WHICH IS INSIDE, ADVANCE OR JUST UNUSUAL

Carburetor Chatter

A message from one of our operatives who is responsible for espionage work in the Detroit sector has just been decoded which indicates that one of the combination manufacturers has developed and is up to the testing stage on a special carburetor for trucks. The feature of the truck carburetor will be fuel economy. Somewhere in the decoding process the name of the manufacturer became lost so it is impossible to tell you more.

Piston Paragraph

Light weight pistons that will stay put in both diesel engines and super-charged gasoline engines are at present occupying the attention of one piston manufacturer. Said manufacturer will not permit us to give you his name until he is positive that the research work is finished. So far special construction and special alloys have been involved.

Economy Engines

Here is one from the fleet front. A number of fleet operators are contemplating the removal of six and eight-cylinder engines from some of their light chassis and replacement with small, four-cylinder stock engines. The reason being, of course, that they do not need the power and are unwilling to pay for something they do not need or want. Is this a trend?

Converter Coming

Along about March the details on a completely automatic gasoline to fuel oil conversion unit should be available. The switching over from one kind of fuel to another without manual control is accomplished by a thermostat.

Tire Topics

One of this department's spies had to be sent back for a second look with a more powerful set of field glasses. After the first look, he saw and reported on a device which makes tire mounting easy. The equipment could, in a pinch, be made in the fleet shop, using a hand drill to operate it, but there are not enough details available to clearly understand its operation. It was suggested that on his second trip our observer carry a long-range camera. If he did, and if the shot took, we'll illustrate it on this page.

Purely Personal

Last month this department played the Mack dark horse right on the nose by giving advance information on the new Mack Jr. line-up on both prices and capacities. The bet hit almost 100 per cent on the nose despite the fact that it was played through a difficult parlay of seven models. The pay off is in this issue—a complete description.

Facts for Foreigners

Two models of Oldsmobile trucks are being built for export but so far as is known they will not invade the domestic market. Chassis prices are $575 and $600, wheelbases are 131 and 157 in. The chassis weights are 3060 and 3125 and the gross weight for both is 12,300 lb.

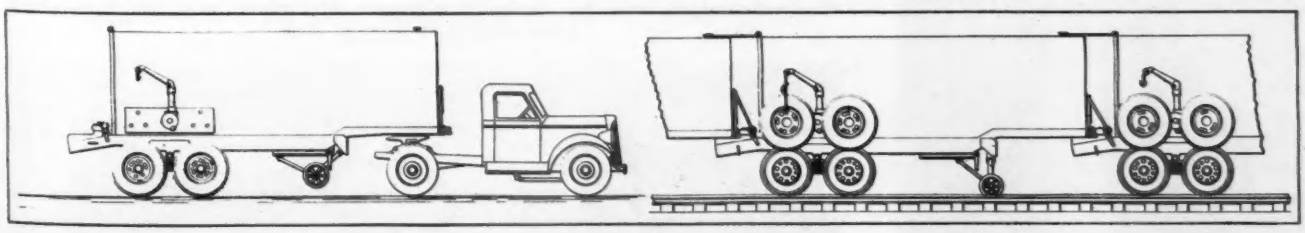
Cylinder Sleeve Syllables

These new very hard sleeves to be used as cylinder liners have created new requirements in piston rings. After experimenting a while the researchers have come to the conclusion that oil can be better controlled with dead rings with expanders behind them even when there is no wear.

Diesel Discourse

Any day now a new transcontinental run will be born. This one will be made with a 1-ton truck and the purpose will be to demonstrate economy. The power plant of the marathon truck will be an imported, two-cylinder, horizontally opposed, four-cycle diesel. If the run scores, the engine will be built in this country, probably on the West Coast.

Charles H. Martin, the father of the semi-trailer, has applied for patents on this combination rail and road semi-trailer that can be operated in trains when on rails. Note coupling ramp on rear of each trailer, top coupling and method of carrying wheels when the unit is on the rails



Bleeding Boosts Heat and Burns Out Tire Life

It Also Causes Pressure to Go Increasingly Higher Thus Defeating the Operators' Expectations, Tire Authorities Declare Unanimously

FLEET operators should not "bleed" tires. This is the opinion of tire authorities.

By "bleeding" tires the operators reduce the pressure which permits greater flexing which in turn creates heat and results in more pressure which is just exactly what the operator wants to avoid. In addition to increased pressure there is the more important factor of increased heat from the flexing which weakens both the rubber and the cotton in the tire. Thus the tire is subject to pressure when it is in a weakened condition from heat. Experiments such as the one recorded on the accompanying graph prove that the temperature rises rapidly following "bleeding."

In the following statements from tire experts there may seem to be a needless repetition. Such repetition is given because it shows that the various tire factories obtained the same results from their experiments with "bleeding" and that they all based their opposition to "bleeding" on similar facts.

By G. M. SPROWLS, Manager, Highway Transportation Department, Goodyear Tire & Rubber Company

MANY operators of motor vehicles have the idea that it is advantageous to bleed tires (let air out of tires) when the inflation pressure increases above the standard recommended for the load carried. If their purpose in bleeding is to reduce the liability of blowouts due to high inflation, unless the road surface is rough, results of tests indicate their action will probably bring the opposite to what they desire.

High speed and/or overload will increase the inflation pressure in tires, especially during warm weather. The inflation increase will not be sufficient to cause blowouts unless there are other attendant conditions. With the increase in inflation pressure there will be an increase in temperature. For example, a 9.75-20 tire starting with 70 lb. inflation pressure increased to 85 lb. and the temperature inside the tube reached 214° F. Tires operated under similar conditions, but bled at frequent intervals to 70 lb., showed the temperature in the tubes increased to 252°. After cooling for 10 hr. these same tires, which had been bled, showed a decrease in inflation to 51 lb. This, of course, would be much too low an inflation to start another trip with, assuming 70 lb. was the inflation recommended for the load.

A temperature of 252° is a dangerous temperature for tire operation; blowouts can be expected at such high temperatures due both to the decrease in tensile strength of the cords used in carcass of the tire, as well as to the softening of the rubber holding the cords in their proper position.

On rough roads, it may be desirable to lower the inflation pressure, but speeds must be kept low if blowouts are to be prevented under such conditions.

Aside from use on rough roads, we would not recommend tires be bled.

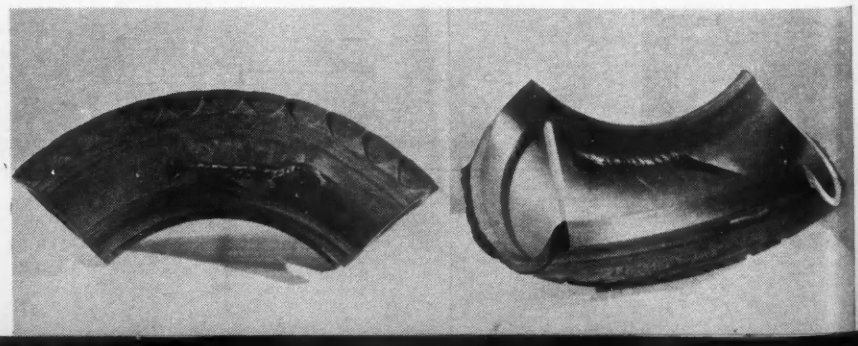
It should be kept in mind that overload and/or high speed are the most common causes of tire blowouts.

The Common Causes of Tire Failure

By W. C. BRAY, Manager, Truck and Bus Tire Dept., B. F. Goodrich Co.

RELATIVELY few people outside the tire industry appreciate the real functions of a pneumatic tire for truck, bus or other commercial service except when one fails prematurely. My purpose is to discuss these functions, some of the major aspects of pneumatic tire construction, and conditions which have

Left—Feather-edged wear due to faulty alignment; next-uneven wear due to overload, under-inflation or crowned roads



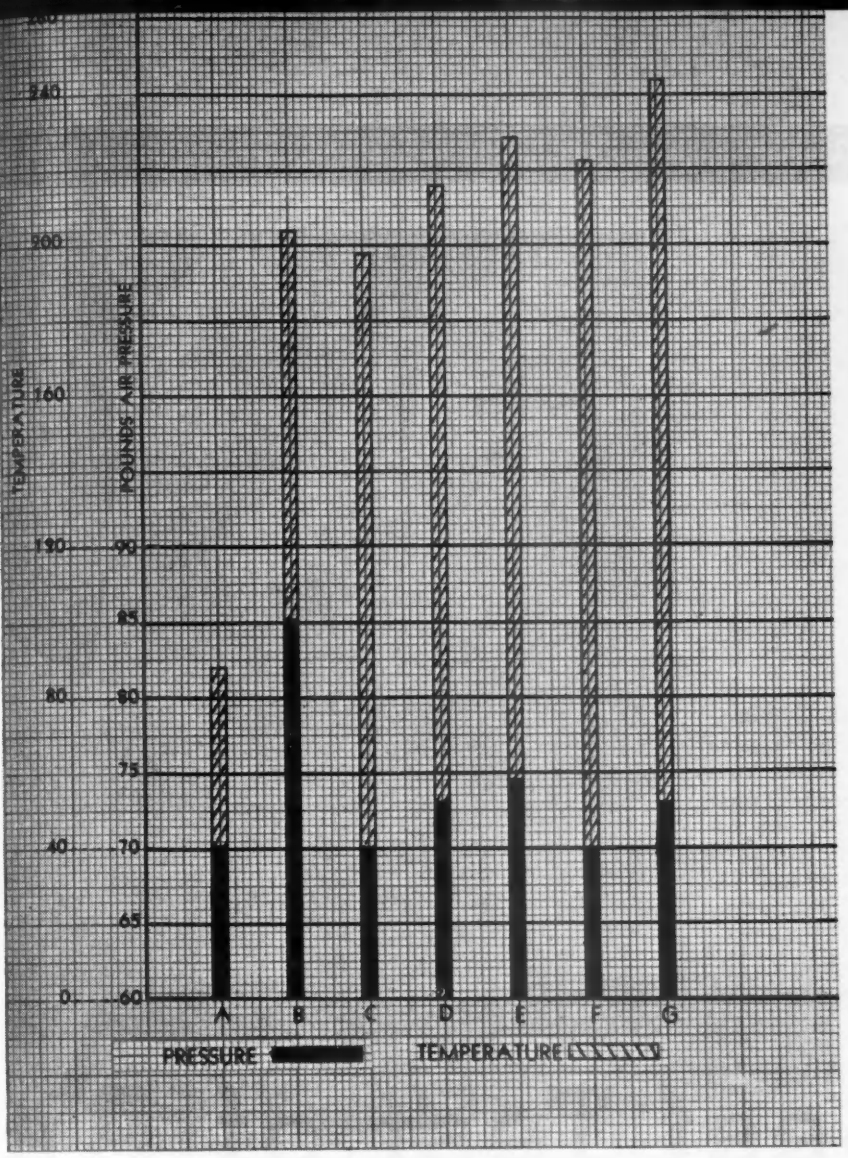


Chart shows how tire temperature rises after bleeding

LEGEND FOR CHART

A—Initial conditions
B—After 150 miles at 45 m.p.h.
C—Pressure "bled" from 85 lb. to 70 lb.
D—140 miles after "bleeding"
E—Load increased to 4700 lb.
F—Pressure "bled" from 74½ lb. to 70 lb.
G—200 miles after "bleeding" (tire failed)

By K. A. DALSKY, Mgr., Truck Tire Sales, General Tire & Rubber Co.

TIRES get hot because work is going on inside of them—and work creates heat. A load on a tire compresses it against the road and the whole structure of the tire is bent out of shape. The tread tries to slide up along the surface of the carcass. This sliding action causes intense heat in all parts of the tire but since the greatest action takes place at the shoulders of the tire these are commonly called hot spots. That is why 99 out of 100 heat blowouts start at the shoulders. The rubber and cotton get so hot in these spots that they literally have the life and strength scorched out of them and the expanding air bursts out.

Blowouts are not caused simply by the increase in air pressure in a hot tire. Blowouts occur because heat has weakened the walls of the tire down to the point where the air pressure is strong enough to blow it out.

Because of the factor of safety which tire manufacturers build into all tires it would require four to five times their normal air pressure to burst them. But when a tire heats up to an abnormally high temperature the cotton and the rubber may have half or more than half of their strength scorched out of them. That means their bursting point has been brought down 50 per cent and this very same heat has caused an increase in air pressure of perhaps 30 to 40 per cent. Then the combination of a weakened tire and increased pressure has cut the factor of safety down to the danger point.

(TURN TO PAGE 46, PLEASE)

much to do with tire life, and thus with economical operation of the commercial vehicle.

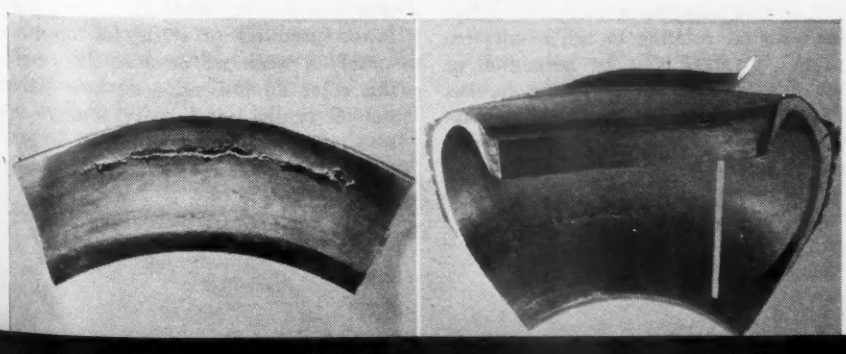
A pneumatic tire for modern-day commercial service has in reality a two-fold function. First, it serves as a flexible container or envelope for the air that carries the load. It is the air within the tire, not the tire itself, that supports the load. Its other function is to transmit the driving and braking action in the operation of the vehicle. Modern motor trucks and busses develop tremendous power and all of it must be transmitted through the rubber and cotton that goes to make up the tire.

A good truck or bus tire must, of course, offer maximum resistance to abrasion and cutting. It must wear slowly and evenly. Normal treadwear, however, is something that can be observed from day to day and as the tread becomes thin the tire may be removed from service before final failure without causing a road delay. In addition to satisfactory treadwear, a good tire must have maximum resistance to carcass failures in the form of blowouts which usually occur on the road while the vehicle is in operation and which usually result in costly delays.

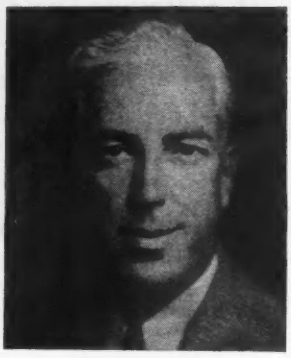
Under certain conditions a truck or bus tire carcass may fail as the result of severe impact. In this type of failure the tire is struck a sudden blow and the cotton cords in the region where the blow is received are stretched to the point of rupture and the tire

(TURN TO PAGE 46, PLEASE)

Tire sections shown below and on the opposite page illustrate four different types of overload breaks



By W. J. CUMMING, General Superintendent, Surface Transportation Corp., N.Y.C.



W. J. CUMMING, though a bus operator, is confronted with the same problem of selecting engine oil as the truck operator. He is pretty well satisfied with what oil specifications tell him about oil, with the exception of the wear factor. His own tests are necessary to determine which oil best fits his requirements in this respect. This article gives all the details of his method of selecting oils as he described them to members of the SAE. It contains the meat of his paper and has his personal approval.

The Best Test of An

Specifications Covering Viscosity, Pour Point, Etc., Are a Guide to Good Oils But Final Choice Should Be Made On Wear Factor Determined by Test

LET me say before I outline the tests by our company in selecting lubricating oils that we are aware that oil specifications, as such, should not be considered definite or conclusive of an oil's ability to perform. They are helpful only if it is understood that they are merely directive and indicative within certain limits.

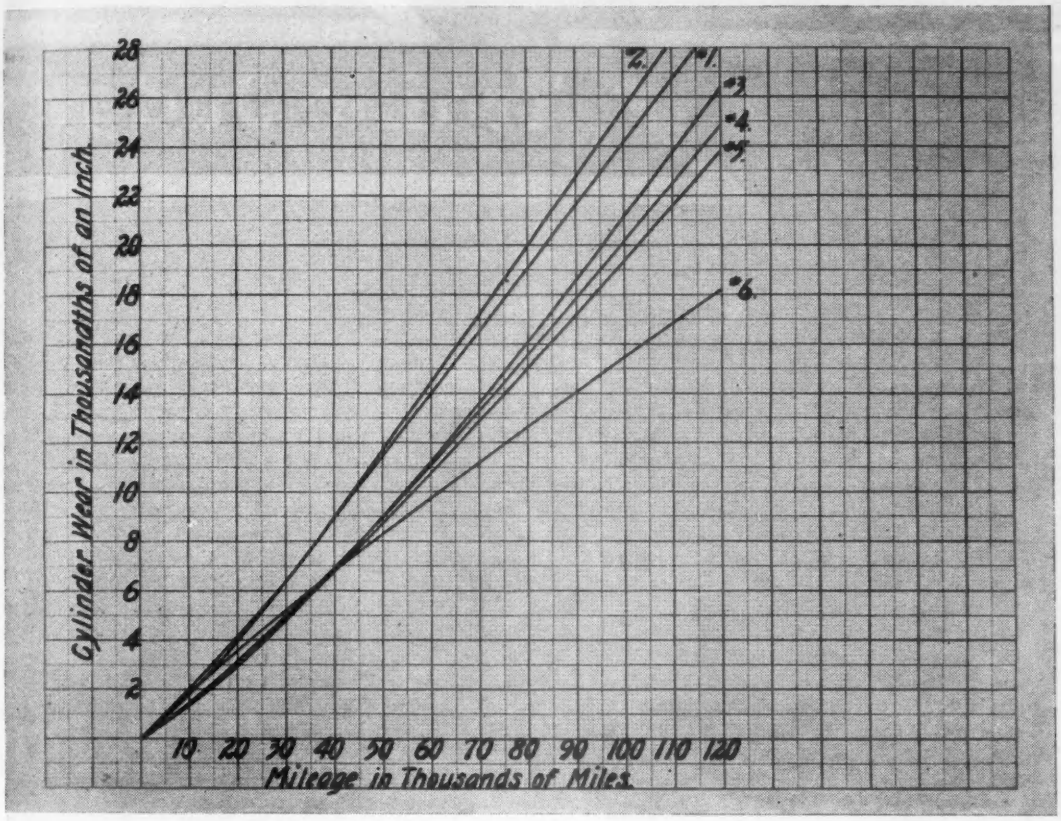
The first item in oil specifications we consider is Viscosity or the measure of the oil's resistance to flow. We have been able to designate as our standard an SAE 40 oil for both winter and summer use. Please do not misunderstand me on this point. We know our own engines and conditions of operation but our ideas may be unsuited for any other operation because of wide variations in the important factors involved. An engine oil should have sufficiently high viscosity to keep moving parts separated at their highest operating temperatures and since our engines in comparatively slow city service have relatively low crankcase temperatures in the summer months we have selected an SAE 40 oil for all year around service.

Next we consider Flash and Fire Points, not as a factor to compare with others in determining the source of the crude or as a means of determining the measure of refinement to which the oil has been subjected, but merely as a figure of comparison with other oils of known performance, with reference to low consumption.

Carbon Residue or Conradson Carbon is next considered and while it has little actual relation to the results expected, we feel it is an indication of an oil's tendency to carbonize in use. Providing we maintain good carburetion in an engine our main worry centers around carbon deposits in rings and ring grooves. "Sticking" rings ruin oil consumption figures and result in obnoxious fumes.

Pour Point is next considered and since our garages are all well heated and engines run continuously during working hours in the winter months we are only interested in this feature in checking whether or not oils are dewaxed.

We consider finally, the Color and Gravity, not placing undue importance on either. Color is interesting, not in new oil, but in used oil. Having allowed used oil to settle for approximately a week we have in the resulting color an indication of how stable the oil really is. Gravity, we are interested in mainly because, in a general way, the low specific gravity oils

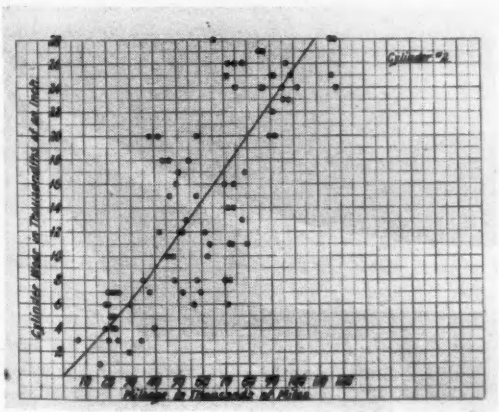


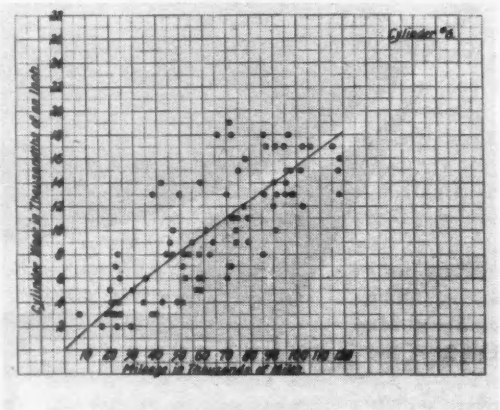
Left—Plotted curves show average wear on all cylinders with different oils

Below left—Each circle represents actual wear on No. 2 cylinders on a test engine at the specified mileage. The curve represents the average wear of all No. 2 cylinders

Below right—A similar chart showing actual wear on No. 6 cylinders. Note greater wear at No. 2 cylinders where water enters block from radiator over No. 6 cylinders

Oil Is Engine Wear





will have a high boiling point and therefore ought to give low consumption figures.

HAVING determined on a specification that is merely an indication of the grade of oil we wish to use, tests are arranged with representative oil companies to run from 60 to 90 days. For these short tests, two to four engines are selected that are as nearly identical in terms of mileage as possible and that are employed in the same type of service, preferably on the same routes.

Low consumption is the aim of these tests and there is very little difference in the results obtained from the products of many refiners in the same price class. It is in the tests for wear of approximately one to two years' duration that the widest variety of results is obtained.

We record the development of wear from the initial mile to 120,000 miles of life, measured approximately every 20,000 miles in each cylinder. This scheme, since we use the dry-sleeve methods of salvaging cylinder blocks, also gives us an opportunity to improve our wear factor by choice of improved iron alloys.

The 20,000 to 30,000 mile check shows cylinder wear all the way from .003 to .008 in. This is due to the wide variety of service found in our operation, which represents the minimum wear in high gear urban routes as well as the maximum in thickly congested low gear city routes. The wear

(TURN TO PAGE 65, PLEASE)

The Verdict of Radio's Traffic Judge:

"GOOD afternoon, this is station WJR, the goodwill station of Detroit, bringing you the 'Traffic Court of the Air.'"

Every day, except Saturday, at 1.30 p. m., Judge John J. Maher of the Detroit traffic court carries to the public an inspirational lesson on safe driving. In his broadcasts, Judge Maher tries to bring out the things that are not generally known to the man on the street —such things as traffic rules and regulations as well as the inherent danger of doing certain things when you're behind the wheel.

Because Judge Maher has a message for fleetmen everywhere and because he has been so instrumental in giving the truck driver a good name as a citizen and as a safe driver, we visited with the Judge the other day and sat through a session of the broadcast.

JUDGE JOHN J. MAHER, who broadcasts kind words about truck drivers, is an enlightened public official in the matter of safety. He has visited fleet shops and service terminals and attended truck drivers' meetings to become acquainted with safety problems. A keen student of the safety problem, his observations are authoritative and helpful.

"The man on the street as well as certain public officials, who should know better," said the Judge to us, "have a mistaken idea as to who are the careless drivers. The popular notion that truck drivers, bus drivers, and taxi drivers are the bad drivers is all wrong.

"In my opinion the only safe drivers on the streets are the professional drivers—the men who handle

Truck Drivers Are Tops

Detroit's Radio Judge Broadcasting for CCJ Puts Truck Drivers in Safety Hall of Fame As Examples for Amateur Drivers

By JOSEPH GESCHELIN

trucks, buses, and taxicabs. It's the other fellows who are wrong. The professional driver is educated to drive safely and gets his education before an accident can happen. He is reached in time. The private driver can't be reached—can't be educated—until we get him into court. And then he usually is not in the right frame of mind to take advice."

According to Judge Maher, the solution to the traffic problem lies in getting the safety appeal directly to the masses. It requires the full cooperation of both the pedestrian and the motorist.

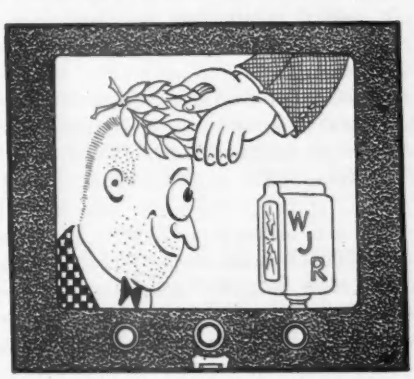
THE Judge, who is one of the most enlightened public officials in this country in matters of traffic safety, has a warm spot in his heart for the truck driver and his boss. Not that he's partial to anyone, but because he has spent a lot of time and energy on his work. He has visited personally the garages and service terminals of the fleetmen in this territory. He has attended safety meetings and banquets at which the fleetmen got together with their drivers. And he knows how much effort the fleetmen are giving to educate their men in safe and courteous driving.

Judge Maher says that when a man's job or his standing with an organization depends upon careful driving, that man can be depended upon to be a safe driver. He is particularly impressed with the safety campaigns put on by fleetmen and the constant safety record, special ratings, and bonus schemes, that keep the professional drivers on their toes all the time.

"The other element that sets the truck operator apart from the ordinary motorist," says Judge Maher, "is the fact that commercial equipment is constantly inspected and maintained in tip-top condition. Certainly that isn't true of the majority of passenger cars on the streets today."

Judge John J. Maher is a dynamic, keen-witted man. He knows human beings and can appreciate their failings. Above all he has a rare sense of humor and a genuine sincerity that makes you feel instinctively that you will have a fair hearing and a square deal. He said on a recent broadcast, "This Court will not tolerate hysteria in dealing with accident cases. We'll try every case on its merits and no matter how serious may be the charge against a person, if he's not guilty he'll be dismissed; if he hasn't been n e g l i g e n t, he'll be treated accordingly."

JUDGE MAHER tells us that the "Traffic Court of the Air" was not his idea, in fact it was started against his most strenuous objections. The radio program was the brain child of the operators of station WJR and they first proposed it during Safety Week in Detroit, in the spring of 1935. The Judge opposed the idea of broadcasting court cases on the ground that it would be injurious to the dignity of the court.



However, after considerable pressure had been brought to bear by public-minded citizens, he consented to conduct the broadcasts during the safety drive.

So the "Traffic Court of the Air" made its first appearance on May 13, 1935. Its immediate reception by the public was so widespread and so whole hearted that Judge Maher agreed to continue the broadcasts indefinitely, provided they were approved by the State Supreme Court. It is a matter of record that the highest court of the State gave its unqualified approval after a brief study of the problem.

So far, the broadcast has netted over 5000 letters from five or six neighboring States, also from the nearby Province of Ontario. The scope of the broadcasts has been constantly widened and it is now possible to increase the territory served by WJR wherever desired.

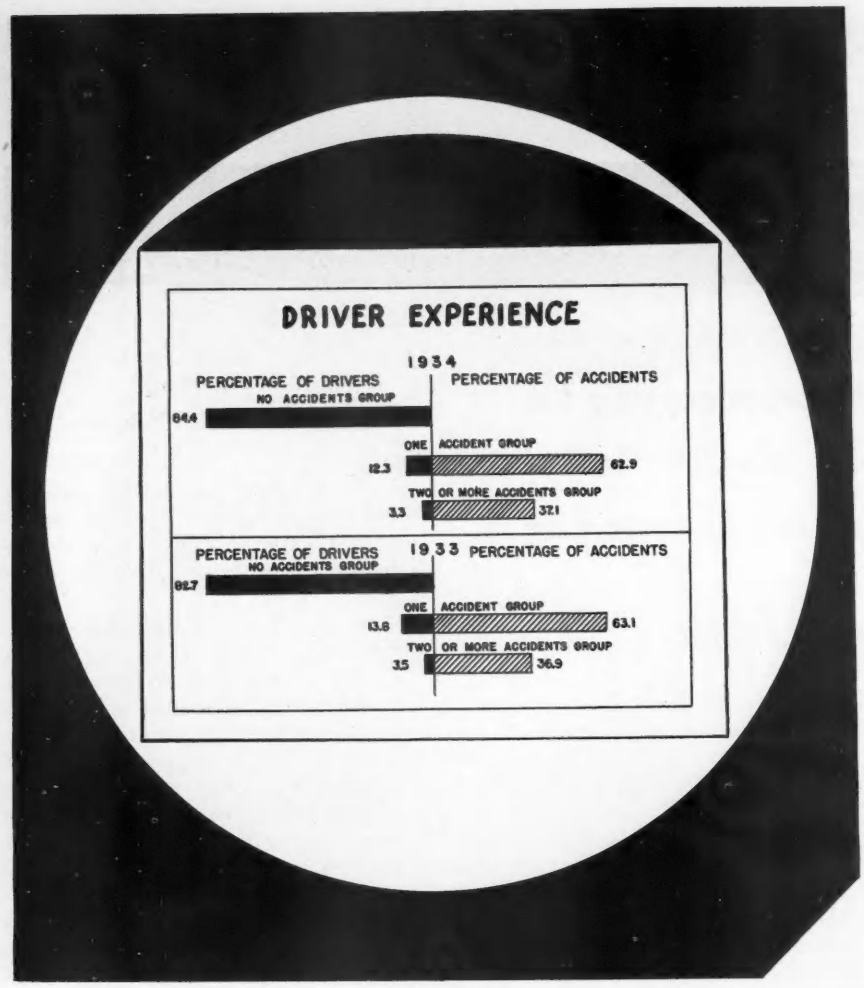
WJR considers this broadcast one of its most important services to the public, no better evidence of which is found in the fact that the announcer and commentator is Duncan Moore, the studio's director of public relations.

"THERE is no one cause for traffic accidents—there is no one cure," is the way Judge Maher sums it up. But because he feels that the solution lies deeply in public education, the Judge has started writing a book which is almost completed. This book should find wide circulation in the public school systems and will start the education right at the source and before the potential car driver ever gets behind the wheel.

Perhaps you'll be interested to get the gist of two recent cases involving truck drivers, as they were tried on the air. They're the best examples we know of how this man through his enlightened and human attitude tempers justice with the wisdom of a Solomon.

Scene is the traffic court of the air, not so many weeks ago. Defendant is a truck driver accused by a motorcycle

(TURN TO PAGE 62, PLEASE)



"SELECTION of responsible, capable drivers is the first step towards a good no-accident record. In the Equitable Auto Co.'s fleet road and code tests are required of drivers before they are selected and authorized to operate company vehicles. Drivers are tested for vision and hearing every two years. Full time drivers submit to a complete physical examination annually."

By JOHN M. ORR, Gen. Mgr., Equitable Auto Co., Pittsburgh

The Public Be---Saved

Pittsburgh Utility Fleet Cuts Accident Rate By Supplementing Driver Selection With Preventive and Corrective Measures

THERE is no magic carpet upon which we can ride our fleets to accident freedom, but we know from experience that substantial progress can be made by proper approach and treatment. The factors most important to a good accident experience are the selection of . . . capable, cooperative drivers who realize their responsibilities, and a sincere desire of management for the safe operations.

In discussing methods to attract the drivers' interest and cooperation in the improvement of accident experience, I should like to analyze the experience of a public utility fleet operating about 6,000,000 miles per year with 600 vehicles.

The miles driven per accident (from a scratched fender to a fatality) have been as follows: 1930, 12,953; 1931, 14,409; 1932, 16,722; 1933, 17,637; 1934, 20,869; 1935 (11 mos. actual, 12th mo. estimated), 23,960. Accidents per 100,000 miles were 7.72, 6.94, 5.98, 5.67, 4.79, and 4.17 respectively. The average frequency in 1934 was at the rate of an accident for each 22 months of truck operation for the entire fleet.

Accidents should be classified as to type. As an illustration, collisions of a utility's vehicles with a stationary vehicle or object were responsible for the greatest number of accidents in a recent period. In the preceding year the highest number of accidents were in the

(TURN TO PAGE 110, PLEASE)

One of the four truck platforms at Montgomery Ward's in Chicago. Trucks all assigned to stalls with hours they are to pull in and pull out. Each platform has facilities for 12 trucks. Maximum time allowed, two hours. Four shifts of fleets a day. Times to be there are set forth in contracts.

Above—E. L. Muntweyler, Traffic Manager, Montgomery Ward. Below left—W. J. Williamson, Traffic Manager, Sears Roebuck. Below right—L. J. Lacey, Exec. Sec., National Industrial Traffic League

Will the Shippers Invoke Sanctions

IF TRUCK TARIFFS THREATEN ECONOMY?

Shippers are making a determined effort to persuade the trucking industry to keep new tariffs simple. They seem to fear that under Federal regulation there may be a tendency for highway haulers to go haywire the railroad way. This article summarizes the shipper attitude as expressed by shipper spokesmen and touches on what may happen when, as and if.

By GEORGE APPLEGREN

FIFTY per cent of the tonnage that shippers have been taking away from the railroads and giving to trucks over the last 10-year period stands in danger today of being diverted back to the railroads.

Shippers have given free voice to what measures they may be forced to adopt if truckers attempt to impose the same rigid rules as the railroads have adopted. Popularly, these measures are: first, tonnage diversion back to the railroads; second, buying their own equipment and hauling their own freight as private carriers.

It can be set down, without intent to scare anyone off, that their talk has not been with the idea of making threats. Not from the larger shippers, it hasn't. Most of the 25 or 30 largest users of trucks have equipment of their own in service right today.

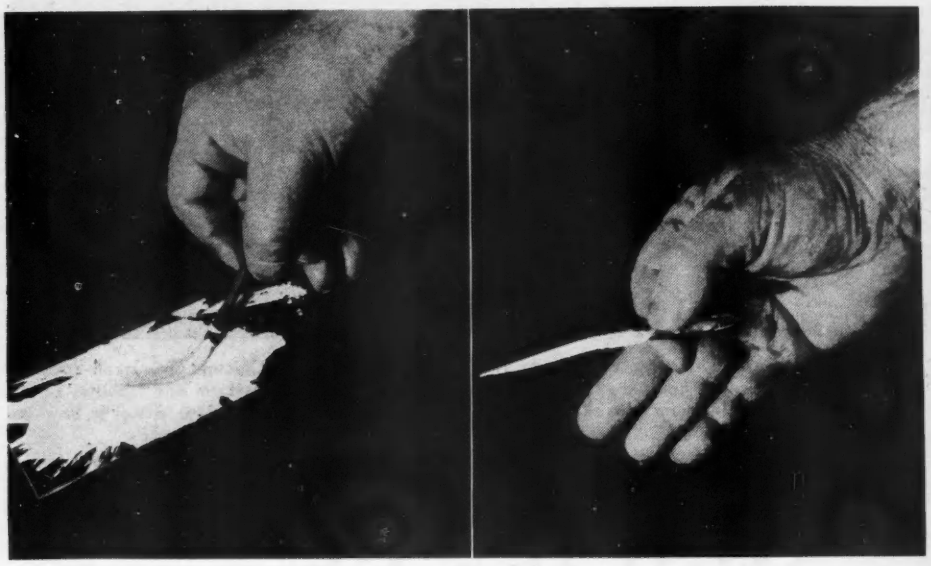
There is a cause for the growing feeling among shippers that trucking may lose much of its present appeal.

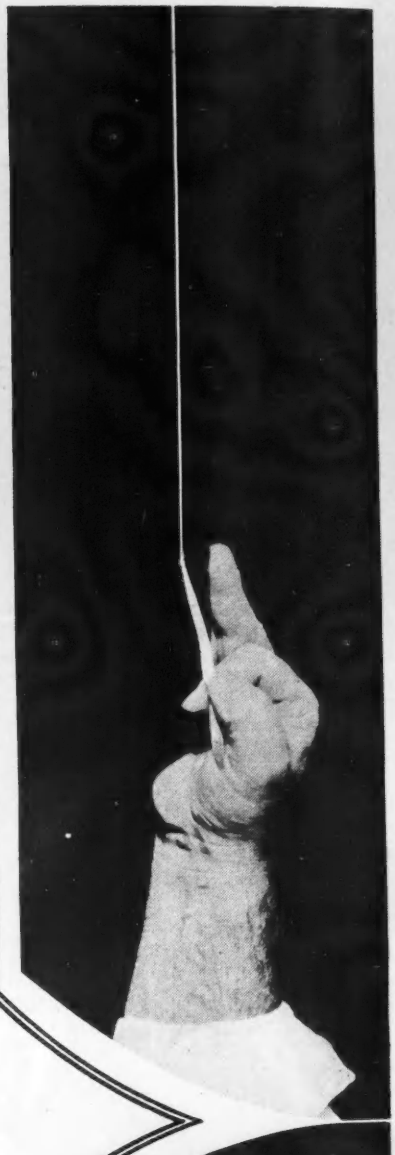
During recent weeks in which truck operators have been considering rate and commodity schedules, as must be filed with the I. C. C., shippers have urged that operators leave things "as they are" on two salient fronts. Almost as if they might have been speaking of one voice, they have urged truckers to let alone the present stipulations which give them the advantages of liberalized packaging requirements and freedom from over-scientific commodity schedules.

AT the time of the A.T.A. convention in Chicago, shippers were active in their appeals. Later, when the National Industrial Traffic League held its annual meeting, it gave over almost an entire day to discussions dealing with highway transportation. The consensus was that liberalized packaging and freedom from over-scientific commodity schedules constitute more than half of the appeal for use of trucks over railroads as means of transportation.

It is learned, too, that during the week between Christmas and New Year, truckers and packers were in conference. Representatives of the latter group told operators that they would strongly resent any move which would increase costs of shipping by truck. A report of this session indicates that operators were told that approximately only 20 per cent of their tonnage from the packing industry was from benefit of convenience, while 80 per cent was going to truckers because

(Turn to Page 78, Please)





STRIPING

PROVES THAT A STRAIGHT LINE IS THE SHORTEST DISTANCE TO TRUCK BEAUTY

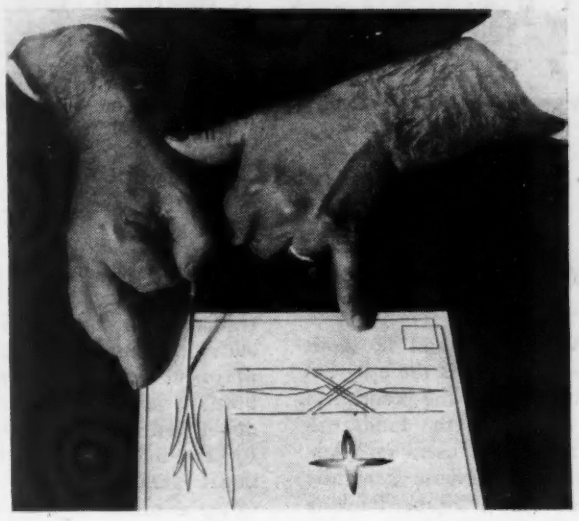
. . . SO-O-o, Give Your Trucks the "Stripe of Distinction With This Economical Beauty Process Quickly Accomplished in the Fleet Shop

OFTEN the difference between an attractive and an unattractive truck is a narrow line. The line is no wider than a stripe, and the stripe is as easy to accomplish as anything you may yet have tried in the way of niftying your fleet. Stripes break the monotony of color and increase the attractiveness of the conventional truck finishing job. Striping is an economical form of decoration and it's easy to do in the shop. So here's how to line-up stripes for improved truck appearance.

To stripe or not to stripe may be the question in the minds of operators when refinishing their trucks. Of course, it's easier not to stripe, but striping does much to add a finishing touch to truck panel designs, cab and hood. Operators who have avoided striping in the belief that it requires a specialist to execute this bit of decoration on their trucks have been missing a good bet in attractive finishing.

Striping is not the "danger line" that some may think it to be. It is easy, simple to do and effective in appearance and may be used to good advantage on earlier truck models to improve the "lines" of those units. Just as lettering may be designed to give trucks a modernized appearance, so may stripes be used to make that styling further effective.

That "striping" has been evaded by a number of fleets is a fact we became aware of when interviewing operators in the past on the subject of truck finish-



PROCESS—Opposite page (far left) Work both the striping material and thinner on a glass palette to fill the pencil so that it may be held in a horizontal position without slumping as illustrated. Left—Use the fingers (note position) as a guide when striping lines. Above—Showing the correct way to hold the striping pencil. Above right—Showing position of the hands when drawing curves, etc. See story for details.

By STANLEY GERSTIN

ing. And this subject was taboo when we discussed decal transfers in the April issue. This was done purposely, however, because stripes are not practical as decal transfers unless they are an integral part of the main design. Nor are decal transfers of stripes economical. Because of this fact, some fleets have been using gold leaf, particularly for a border on truck panels. But gold leaf has its limitations as operators who use it know. Hence the need of striping, done in the shop, quickly and economically to break monotony of color and increase the attractiveness of the conventional truck finishing job.

With so much emphasis being placed on appearance, striping is too good a bet to be overlooked. So we shall line up with stripes and put the dope about striping, from first to last, on the line for operators' consumption.

STRIPING requires considerable care and patience but little skill and can be easily mastered in the shop. One of the important details in connection with striping is the striping material to be used. Striping color should be free-flowing and have good opaque quality, regardless of the color used. The color should be of a heavy pigment material that will cover for the full length of a striping stroke. The consistency of the material should be such that it will not show where a line begins or ends. The consistency must be such that it will adhere to the surface on which you are striping. You must also be able to remove it within a reasonable length of time by using rubbing compounds without marring or in any way disturbing the finish—this in event the painter makes a double or irregular line out of proportion.

The tools used are also very important. While no particular make of striping pencil is recommended, a full box sword or dagger striping pencil is suggested. This type is generally known as a hand-shaped camel hair striping pencil, the handle of which is wound with silk thread. If properly filled or loaded with striping material, the pencil will carry a stripe averaging 36 in. in length.

AMONG the different types of striping pencils are the double-line sword striper and double-line dagger striper, which pencils are especially adapted for rim and hub. A double line can be drawn around the hub or rim without stopping if the pencil is filled carefully. But the most commonly used striping pencil is the single sword. This type is being used mainly for bodies, hoods, fenders and wheels. These pencils are manufactured in size Nos. 1 to 4 and the average length of hair stock is 2 in.

Use the No. 2 striper if you desire a medium striper that draws a very fine line. This is an all-around striper and it can be used in almost any place. It is especially adapted for cab, hood and fenders.

A single sword striper, size No. 3, is particularly adaptable for wheels. A very fine line can be drawn with this striper and by filling full and with a little extra pressure a heavy line can be drawn, such as is usually used on truck wheels. The dagger point stripers are designed mainly for scrolls, corner designs, in striping panels or gear parts. These are manufactured in the same sizes and used mostly on motor trucks and buses.

If you wish to draw a broad line, the double-thick, square-end striper is recommended. This striper is well adapted for cutting in moldings or windows in colors where the saving of masking labor is desirable. This striper will make a square end and you can draw long lines with ease and uniformity. Black, which is usually a difficult color to carry in a striping pencil, is carried nicely by this double-thick, square-end striper.

Some operators use spaces to mark

(TURN TO PAGE 91, PLEASE)

AFTER HOURS

Editorial Comments By George T. Hook, Editor

★

Highway Robbery

HIGHWAY robbery (and no smile to convey good nature) is the ugly but proper way to speak of the practice of diverting to other uses the funds collected from automotive users for highway purposes. The excuse generally made for this form of legalized felony is that the money is readily available and urgently needed. But, as Major Britten, of the National Highway Users Conference, so neatly expressed it in a recent address, "that is the excuse which generally is offered by an embezzling bank cashier."

And that is a searing truth. Legislators—most of them, anyway—realize that they are violating ethics and committing a social injustice when they authorize the rifling of highway funds in the name of unemployment relief and whatnot. Like the absconding cashier they lack the courage to do the right thing. Faced with relief needs and school deficits the right thing is to place the burden on the community as a whole and not upon one class because it frequents a gas pump which happens to be a handy place to perpetrate an extortion.

The call for courageous legislative action will be loud in many states this year and next. The Federal Administration seems determined to shift to the states the burden of providing unemployment relief. State legislatures will have to provide and since there's no doubt that the public will be in a rebellious mood on the subject of additional taxes, there will be a temptation to tap available highway funds.

Fleet operators must defeat the temptation. In using their influence to protect highway funds from the ravages of politics they will be protecting the highways from the ravages of inefficient maintenance and thereby protecting themselves against the ravages of costly operation.

★ ★ ★

The I. C. C. Challenge

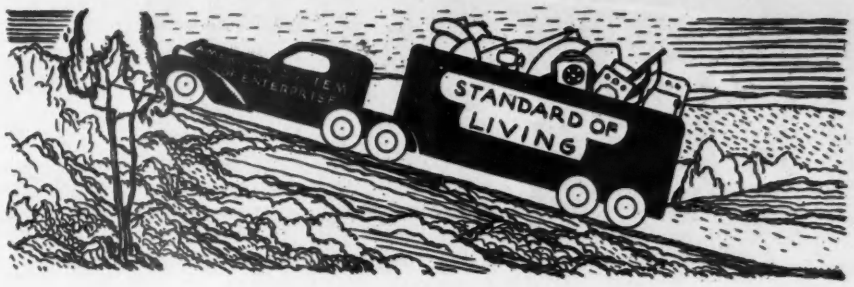
ONCE more the Interstate Commerce Commission has exposed itself to the charge of opponents that it is railroad-minded; once more its action has given weight to Federal Transportation Coordinator Eastman's contention that the I. C. C. is not properly constituted to administer regulation of all forms of transportation and should be sweepingly reorganized.

In granting by a 6 to 4 decision, and without investigation, the request of railroads to inaugurate free pick-up and delivery of less-than-carload traffic and to make an allowance of 5 cents per 100 lb. to shippers and consignees who elect to perform the trucking service themselves, the majority of the Commission showed themselves disposed to favor the railroads in their attempt to regain l. c. l. traffic lost to trucks. The minority represented in the vote included the three members of the Motor Carrier Division. This circumstance would seem to indicate that cleavage resulted from the minority's conviction that the railroad proposal contained elements of unfairness to truckers.

In opposing the railroad petition the trucking interests, represented by the American Trucking Associations, suggested a thorough investigation. Otherwise, it was pointed out, the Commission would not know the effect of the service on the revenues of rail carriers, nor how much truckmen, now under I. C. C. jurisdiction, would be paid for the drayage they perform. It was charged that the allowance to shippers was, in effect, a plain rebate, and, even if permitted under the law, would be illegal if it exceeded the cost of performing the service.

There is reason to suspect the legality of the allowance in practice. The experience of railroads that experimented on a limited scale with free collection and delivery service shows that 70 per cent of the shippers take advantage of the 5 cents per 100 lb. allowance. There must be some financial advantage in the practice, otherwise they would have the railroad perform the complete service. If the practice is profitable it is illegal because the allowance exceeds the cost of performing the service, and because the effect is a rebate pure and simple.

The road to an investigation is still open. The A. T. A. can compel it by filing a complaint. It is a course that should be pursued, no matter what the cost, in order that important issues may be clarified and precedents established which will assure to the trucking industry a fair field in which to exist and to expand under Federal Regulation. Otherwise if there is a constant threat to existence there exists no opportunity for expansion, and Federal Regulation becomes a snare and a delusion.

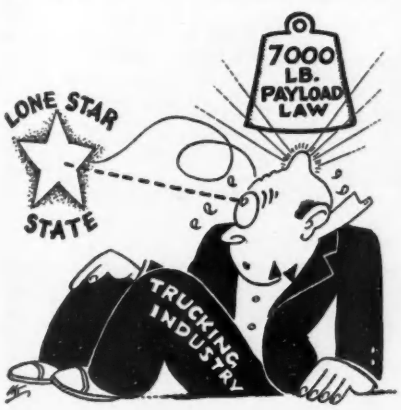


The Fallen Star

THE sovereign state of Texas, as a political candidate would phrase it, will devote the summer and fall months to celebration of the one hundredth anniversary of its independence from Mexican rule. We mention it here merely because some men in the truck industry may want to take advantage of the opportunity to see what a state really backward in regard to truck transportation is like at close quarters.

Texas, you may recall, became the No. 1 enemy of highway transport progress when it enacted the outrageous railroad-influenced 7000-lb. payload law, and publicly acknowledged the outrage by permitting twice that poundage if the load was coming from or going to a railroad.

So, if you join Texas in celebrating its independence from Mexican domination, utter a prayer while on its sovereign soil that it may soon rid



itself of the uneconomic shackles of railroad domination. And swear to yourself that if anything like that happens back in your home state it will be over your bankrupt body.

* * *

Diesel Diplomas

WHEN we aired our annoyance in December with the notion that a diploma is necessary to service a diesel engine we expected the diesel schools to declare a vacation, arm themselves with arguments and declare an open season on the editor. We were not disappointed. We were, in fact amazed, not so much by the quantity but by the quality of the arguments. There was no mincing of words. The editor didn't know what he was talking about; he was not just practically, but completely dumb.

There had to be a rebuttal and so we made it—the magnanimous one of opening the columns to the presentation of facts supporting the opposite viewpoint that fleet mechanics do need diesel diplomas. So far our offer has not been taken up, nor do we expect it to be.

But just to prove that we don't find ourselves in a precarious position out on the limb of controversy, we have collected proof from fleet men handling diesels in support of our practical viewpoint. We intend to publish it. It proves our point that an experience-schooled mechanic like a college-graduate engineer has the ability and the opportunity to school himself in new automotive developments.

* * *

Our Standard of Living

WHAT is the future of the vaunted American Standard of Living? Is it in danger of being lowered? Will the standard we have achieved be preserved? Or will the standard be elevated?

There is no doubt that the depression period definitely saw the standard menaced. The American Spirit of Enterprise went on strike. Manufacturers, middlemen, retailers, salesmen, buyers all went on strike because they were struck with fear. The stock market collapse, the deflation period were the results of unsound Old Deal policies. You and I stopped buying and that relentless economic ripple spread out until it reached manufacturers, who were compelled to reduce their payrolls. A vicious cycle was begun and our Standard of Living tobogganed. Salaries were slashed until they hurt. Some had to give up their cars, some their homes, some gave up the theaters and some the movies; most of us wore the old clothes a little longer, and scraped together enough for new tubes instead of buying a new radio. All these things helped to make up our American Standard of Living and when we denied ourselves our standard was lowered.

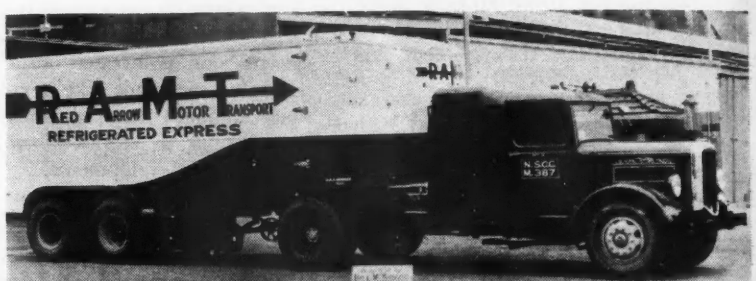
Then the New Dealers came over the mountain and, armed for the most part with experimental, unconstitutional and uneconomic legislation, drove our standard of living lower into the valley. Armed with the cowardly alibi, "overproduction," they undertook to effect underproduction that sent prices of necessities sky-rocketing before our income could accommodate the increases. We had to pinch still more. The radical policies and the uncertainty which they inspired, undoubtedly protracted the depression.

When the Supreme Court began tossing New Deal alphabets into the ash-can, the fog of uncertainty began to clear. Business perceived the trend of events and began planning for an improved future. Public confidence, bruised and battered by the political assaults and muckraking to which our business life was subjected, began to mend; buying, employment, production, selling increased and today we are on the threshhold of complete recovery.

The past year gave proof that the American Standard of Living is still the standard desired by Americans. We had to deprive ourselves of the things which represented it, but we continued to want them, and we bought them as soon as we could afford them. The compulsion is as strong as ever; if anything it has been whetted by our abstinence. (TURN TO PAGE 122, PLEASE)

The

FEBRUARY marks the 50th anniversary of the discovery of the Hall electrolytic process for making aluminum. Thanks to the Aluminum Co. of America, under which the process grew up, we have light aluminum truck bodies and bigger payloads. Just by way of celebrating, "Time to Retire" Fisk, the tire man, steps out with this modern cab-over-engine White with aluminum body built by Rauch and Lang of West Springfield, Mass. The White chassis is Model 731. The aluminum body is 20 ft. long, 8 ft. high and 8 ft. wide and is used to carry a 12,500-lb. payload of tires (from which it never tires) from Chicopee Falls, Mass., home of Fisk, to Springfield, New York and Philadelphia.



McKENZIE BODY WORKS of Wichita built this job powered by a General Motors tractor. The refrigerated semi-trailer is operated by Red Arrow Transport from Wichita, Kan., to the Pacific Coast to haul 15 tons of meat, through desert heat and mountain winds, going west and returning with a load of fruit. McKenzie forced-draft brine cooling system keeps temperatures even. Dry-Zero sealpad in the roof and sides and cork in the floor affords excellent insulation. The semi is 24 ft. long, and, in spite of its size, insulation and refrigerating system, it weighs only 5210 lb.

REO shares the pride which the Village of Shorewood, a suburb in Wisconsin, has in its clean streets and street-cleaning equipment. This Reo Model 1B4 with special hopper body does as neat a transportation job as the street cleaning department does a cleaning job. Shorewood operates a number of such Reo units. Neat work all around.

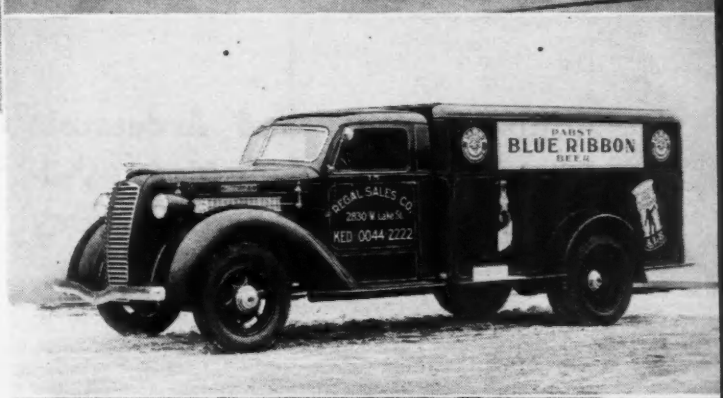
HIGHWAY TRAILER entrains for the highways with this semi-trailer train designed to carry a load of Stroh's beer where thirsty men—and ladies, too—abide. The semi-chassis is a Model 110-C coupled with a 95-C special chassis with dolly connection. The first unit is 19 ft. long, and the rear one is 16 ft. long for an over-all length of 35 ft. sans tractor. Trailers are ply-veneer lined, with steel strips at keg bulge height to protect the veneer. The units afford low loading and close coupling facilities. Spacious panels for lettering is Highway's gift and Stroh's just dessert.

ALBUM Of Modern Truck Transportation Equipment

ANOTHER hit for Mack! This is a model CJ Traffic Type truck with van body built integrally with the cab. It is used by the Market Basket Stores for the hauling of foodstuffs from warehouse to the various stores operated by the company throughout New York State.

NO chance of dodging the limelight with this Dodge chassis and Badger body built for the Kunzelmann-Esser Co., Milwaukee. The Dodge is a 1936 model. The modern-styled body is wide and full, designed for furnitur loads. Cabs is also roomy.

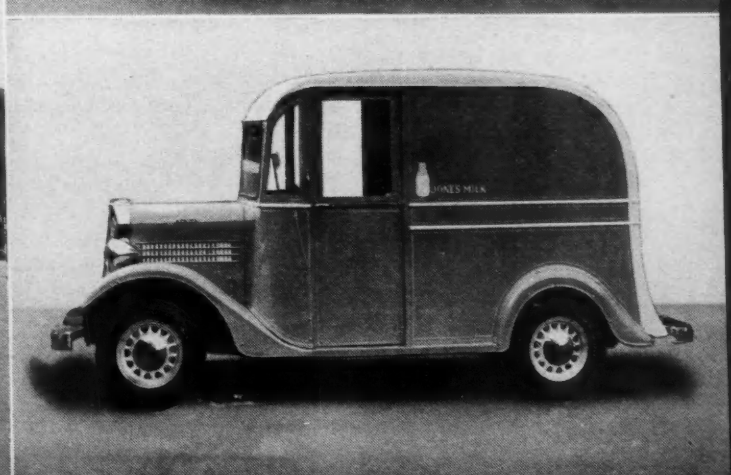
THIS Diamond T is of the class of '36 with smartly styled front-end and cab. The neatly designed body with rounded corners adds to its appearance. The Regal Sales Co. is proud to use this truck to tote Pabst beer.

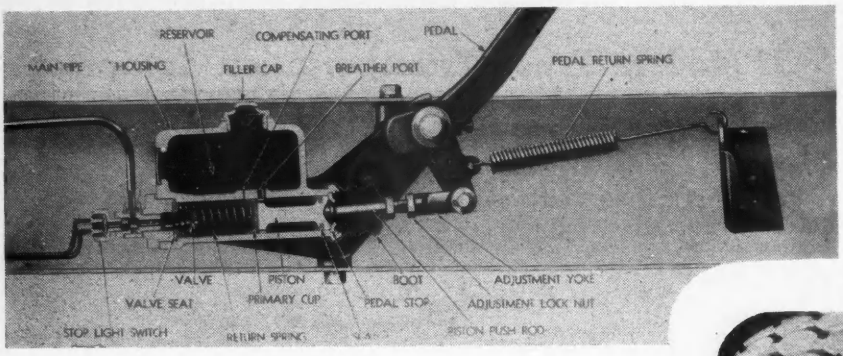


THIS is a smart tank job on a White chassis, equipped with a Grico two-axle drive built by Gear Grinding Machine Co., Detroit. Power is transmitted to two rear driving axles giving traction to four dual wheels. The Grico unit is fitted with an extra set of gears. A control lever in the cab gives the driver eight forward and two reverse speeds. Grico and White thus team up to give National Gas & Oil Sales Co. plenty of power, beauty and satisfaction.

BUDDY STEWART lends a hand so that Jones can make snappy neighborhood milk deliveries. This is the ½-ton, four-cylinder model equipped with a drop frame delivery body with a capacity of 26 cases of milk. "Buddy" gets around with plenty of ease. The doors slide.

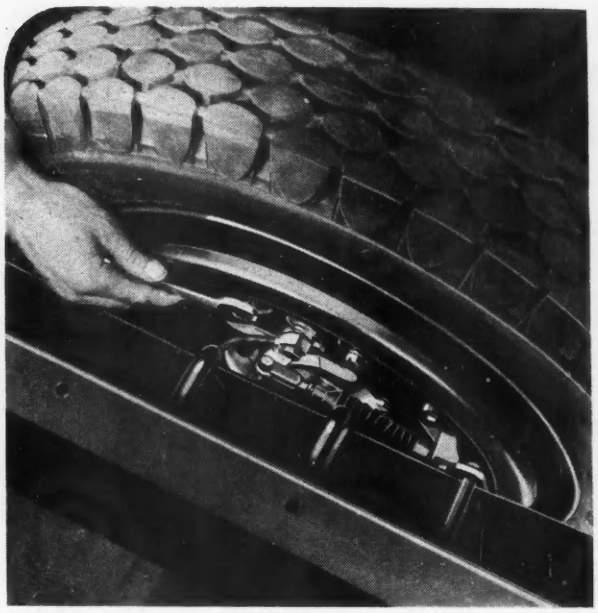
FEDERAL arrests attention. This de luxe Model 15 patrol is used by the Nashville, Tenn., police department to take lawbreakers to the hoosegow in style. Wheelbase is 136 in. Body is 8 ft. long inside. Wire glass is provided for windows and rear door. Walls and ceiling are lined with plywood. Seat backs are padded with sponge rubber, and the unit is wired for radio.





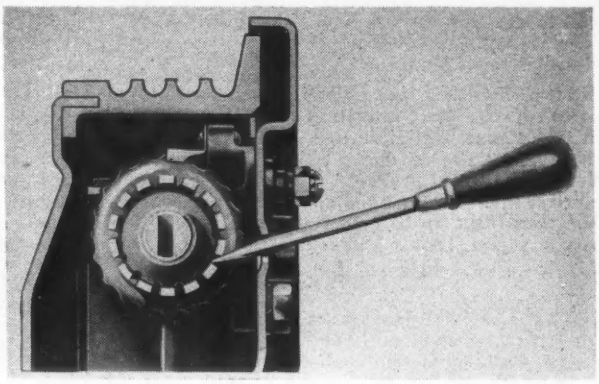
Left—Details of master cylinder.

Below—Adjusting rear brakes on ½-ton truck with ⅝-in. wrench and adjustment with screw driver on front wheels. Bottom—Details of wheel cylinder



HOW TO ADJUST Chevrolet's Hydraulics

Adjusting Hole and Accessible Adjuster Mechanism Makes Adjustment of New Brakes Easy



THE 1936 Chevrolet trucks, commercial cars and passenger cars are equipped with hydraulic brakes. Here are step-by-step instructions for the adjustment of these brakes on all three types of vehicles.

1. Check the clearance between pedal and toe board. It should be ¼ in. If it is not, loosen check nut on pedal push rod shaft, turn shaft in direction to secure ¼ in. toe board clearance. Tighten check nut.

2. Jack up all four wheels. Disconnect hand brake pull rods from the brake cables at the clevis just ahead of the hand brake cable. Remove adjusting hole covers from the backing plate. On knee action models it will be necessary to remove the front wheels as the adjustment ports are in the brake drums. On the 1½-ton truck rear wheels there are no adjustment holes but in place of them are ⅝-in. headed adjusting pinion shafts that are in permanent mesh with the wheel cylinder adjusting cover.

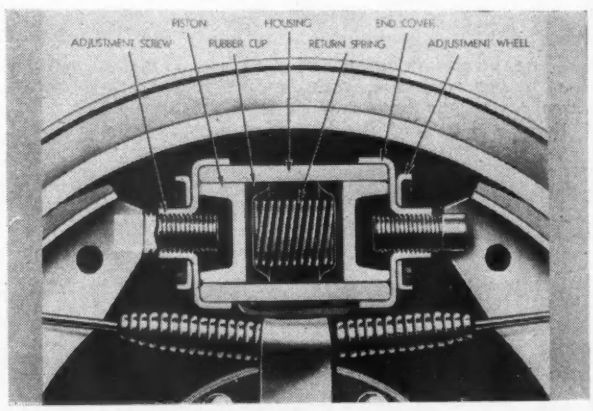
3. Insert screw driver in adjusting hole to engage teeth of adjusting cover. On the 1½-ton truck use ⅝-in. wrench on adjusting pinion on rear wheels. Turn the adjusting cover or adjusting pinion clockwise until the brake shoe causes a slight drag on the brake drum. Turn the adjusting cover or adjusting pinion back:

Four notches on passenger cars and commercial cars;

Five notches on the front brakes of the 1½-ton truck;

Three-quarters of a turn on the rear brakes of the 1½-ton.

This backing off of the adjusting cover the specified number of notches will be indicated by a faint click of the cover lock spring as the cover is turned. Backing off provides proper clearance between shoes and the drum.



4. Set hand brake level in full release position. The hand brake must be adjusted each time the hydraulic brakes are adjusted. Pull on the end of the hand brake cable until all slack is removed. (TURN TO PAGE 28, PLEASE)

Speedometers Go Round and Round

OH-O-OH, BUT IS THEIR INFORMATION CORRECT?

Mileage Is the Basis of Truck Operation and of Accounting Charges, and When the Speedometer Gives False Mileage Readings Fees Are Often Incorrect and Maintenance Less Effective. This Article Outlines the Reasons for Error in Speedometer Mileage and Methods for Correcting It

By HENRY JENNINGS, Technical Editor

THE mere fact that the numerals on a speedometer—like the music in a horn—go round and round, even if there are no valves to push down, may be proof that the speedometer is working okay but it may not be proof that the information is correct.

And if the mileage recorded is incorrect, of what value are the cost figures?

And if the information is all wet, where does the blame belong?

Well, if the speedometer is mechanically sound, the blame rests on the operator. OH-HO. There are reasons.

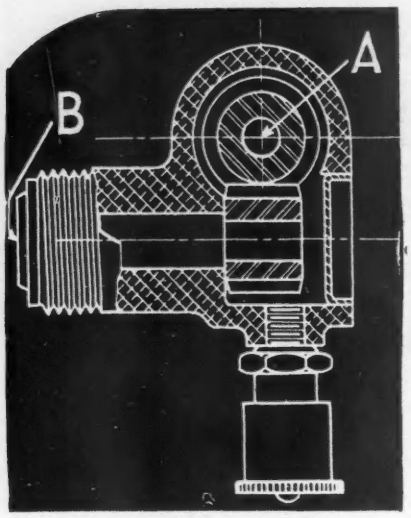
It is frequently necessary for fleet operators to change the rear axle gear ratio and tire size in order to make a truck fit their requirements. More power is sometimes required because of greater loads or grades or a combination of these two factors and at times the operator is up against the necessity of obtaining higher road speed when the loads and grades are of a milder nature. Within limits more power, at a sacrifice of speed, is obtained by increasing the difference in the number of teeth between the driving and driven gear in the rear axle. Greater speed is obtained by selecting ring and pinion set that is nearer to a one to one ratio.

Tire sizes are changed to get a greater carrying capacity or when some consideration makes it advisable to change from single tires to duals or vice versa.

MORE often than not after these changes have been made, the fleet operator neglects to make the correction to his speedometer which is necessary to make that instrument register with some degree of accuracy. Hence preventive maintenance schedules that depend upon speedometer readings are less effective and in cases where fees and costs are based on speedometer mileages, the charges will be out of line for the service performed.

If, for instance, the rear axle ratio in a truck is 5.5 to one and it is changed to 6.6 to one, the difference between the two ratios is 1.1 and dividing the amount of difference or 1.1 by the original ratio, 5.5, it is apparent that the change amount to 1/5 or 20 per cent of the original ratio.

Since the difference is away from a one to one ratio, the engine and speedometer drive will make more revolutions to one revolution of the rear wheels than they did with the original ratio. Consequently the speedometer will



Left—Drawing of speedometer adapter. "A" is transmision connection. "B" is cable connection. Right—hub odometer mounted.

register too many miles per hour and too many miles covered.

The speedometer correction to compensate for the change in gear ratio can be done in two ways. The speedometer drive and driven gears can be replaced so that the reduction between these two gears will be correct for the changed rear axle ratio. If the speedometer gears in the correct ratio are not available, speedometer adapter may be installed, which in most cases will bring the speedometer to a nearly correct reading. The adapters are manufactured without relation to gear ratios. They are designed to boost or reduce the speedometer readings usually in stages of 10 per cent.

In case no correction is made to a speedometer after changes have been made which affect its accuracy, it is still possible to have an accurate history of the trucks travels by figuring the amount of error in the speedometer by percentage such as was done in a previous paragraph. Then if the per cent of correction for all mileage figures after the change of gear ratios is recorded in a place where it will be used to compute the correct mileage everytime a mileage total is needed, the totals will be the same as if the speedometer reading was correct.

Changing the sizes of tires affects the speedometer readings in exactly the same ratio as the effective tire diameters have to one another. As an example, if a tire having an effective tire diameter of 30 in., is change to a tire having an effective tire diameter of 32 in., the amount of change is 2 in. or 6 2/3 per cent. The effect of the tire with a larger effective diameter would be to reduce the number of revolutions of the speedometer drive per mile in which case it would be necessary to obtain and install the correct reduction for the new tire size between the speedometer drive gears or to install a speedometer adapter that would reduce the speed with which the speedometer adds up the miles. If both the rear axle ratio and the tire size are changed both affect the speedometer reading. If the final gear ratio is changed to a ratio nearer one to one and the effective tire diameter is increased, the per cent of change in each case would be added to make the total amount of error in the speedometer and both must be considered in making the correction, regardless of whether it is made with new speedometer drive gears or an adapter. Since both make the speedometer err on the side of not recording enough miles, an adapter, if used, would have to be of the booster type.

If a new gear ratio changes the previous ratio in the direction of a greater difference between the number of teeth on the ring and pinion gears and the effective tire diameter is decreased, both changes tend to make the speedometer register more mileage than the truck actually travels. If an adapter was used to correct the speedometer, the per cent of change at each point would have to be added together in order to determine how much reduction the adapter would have to have.

However, both of the changes described are unusual, most changes being one of greater final gear reduction for more pull, which makes the speedometer register fast. Then, to take advantage of the greater pull, larger tires are often used, which increase the effective tire diameter, which in turn slows up the speedometer. In this case one percentage must be subtracted from the other, then the balance decides how much correction must be made to the speedometer. If the increase in the rear-axle ratio is greater than the proportional decrease in tire diameter, a reduction adapter will be needed, and if the amount of change in the tires is greater than that in the gears, a booster adapter will be required.

Hub odometers avoid complications referred to in this article. This instrument, mounted on the front wheel, is unaffected by changes in final gear ratios. It is sensitive only to change in effective diameter of wheel on which it is mounted. Recalibration by the maker takes care of this change.

Chevrolet's Hydraulics

(Continued from Page 26)

5. Turn the adjusting clevis on the brake rod until the holes in the clevis line up with the hole in the end of the brake cable and install clevis pin and cotter key. Hold clevis while tightening the check nut to avoid turning the clevis and twisting the brake cable or rod.

6. Check the operation of the hand brake to insure equal braking of each rear wheel. When it is necessary to change the adjustment of the hand brake at this time loosen the tight brake rather than tighten the loose brake. This must be done at the junction of the brake cable and pull rod. Do not touch wheel cylinder when adjusting the hand brake.

7. Road test car after each brake adjustment to insure satisfactory results.

Instructions for bleeding the system are:

a. Clean all dirt from around master cylinder filler plug.

b. Remove filler plug and install adapter and automatic filler. (Chevrolet equipment.) Open automatic valve in filler.

c. Remove bleed valve screw from wheel cylinder at backing plate. Attach bleeder hose, keeping loose end of hose below surface of fluid in the jar.

d. Unscrew bleeder valve in wheel cylinder ½ to ¾ turn.

e. Depress pedal by hand allowing it to return slowly. This causes a pumping action which forces the fluid through the lines and out at the bleeder drain carrying with it any air in the system. When bubbles cease to appear at the end of the hose and the stream is a solid fluid mass tighten the bleeder valve and remove the hose.

f. Replace and tighten screw at end of the bleeder valve.

g. Repeat operations c, d, e, f at each wheel.

h. After bleeding operation has been completed at all wheels fill the master cylinder approximately full and then replace filler plug.

Skinner Filter for Diesel Engine Fuel

Type F-3 Stream-line filter and filter pack

A FILTER designed for the purification of fuel oil used in Diesel engines is announced by Skinner Purifiers, Inc., Detroit, Mich. This filter employs the principle of Edge filtration as used in the Stream-line filter for lubricating oils.

The manufacturer claims for this filter a high degree of purification, positive removal of all contaminants in the oil, insuring perfectly pure fuel oil, and constant freedom from wear of injector pump parts, infrequent inspection or replacement of the filtering element, cleaning the filter while the engine is in operation.

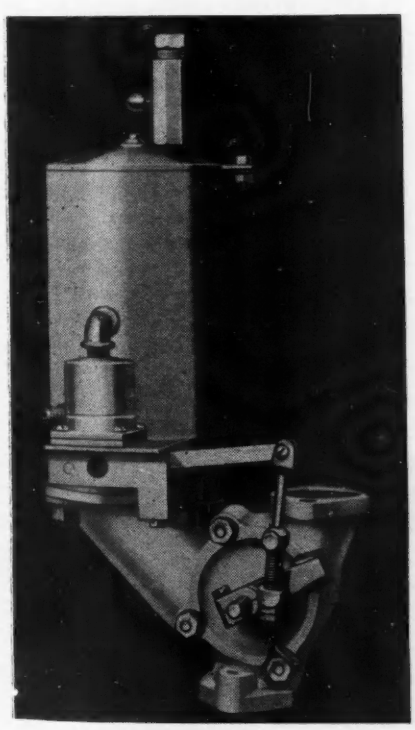
Oil is delivered at the required pressure into the filter-shell where it passes between, not through, the hundreds of specially prepared paper discs which compose the elements or filter packs.

The oil passes into a central hole of each pack, and is discharged into the filter head which is connected to the discharge line to the injector-pump. The impurities which are removed in the filtering process collect at the surface of the packs and do not penetrate into the pack or between the discs. The packs are less than 1/250,000th of an in. apart.

OPERATION of the filter continues until the impurities removed from the oil reduce the capacity. The filter is then cleaned. This is accomplished by opening, in turn, each of the three nuts on the bottom header. As the nut is partially unscrewed, the discharge from the transfer pump in that particular chamber is temporarily cut out of service, while the other two continue in operation. At the same time, the reverse pressure of oil in the filter head discharges clean oil back through the inside of the packs, washing the impurities from the surface. The cleaning operation requires only a few ounces of oil to remove all of the solid impurities which are drained into a small container, or on the ground. The filter is then ready for service again without having stopped the engine.

WHEN furnished for Diesel engines now in service, the filter is ready to connect to present lines to the injector, and is supplied with supporting lugs cast integral with the filter-shell. Approximate dimensions are: 6⅜ in. wide, 11¾ in. high, 2¼ in. front to back.

Evans Unit Converts Gas Engine to Oil



Evans Thermeron fuel oil converter

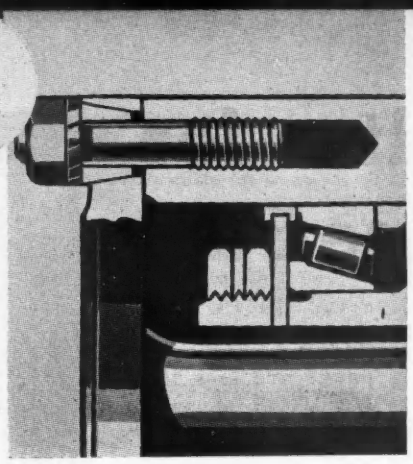
THE Evans Appliance Co., Detroit, Mich., a division of Evans Products, is manufacturing the Thermeron, a device which permits the burning of fuel oil in gasoline engines, making possible a substantial saving over present fuel costs. It also adds power and produces greater over-all motor efficiency, according to the company.

Construction of the Thermeron is simple, consisting of a scientifically designed heater with sylphon regulating heat-control valve which maintains a proper constant temperature.

The Thermeron has overcome the outstanding difficulties of fuel oil use such as excessive crankcase dilution, carbon formation and the use of hot air at the carburetor intake which materially reduces engine efficiency.

The Thermeron has an absolute heat control which is obtained by the use of glycerine as a medium of heat exchange and is accomplished in the following manner: hot exhaust gas is passed through a series of thin steel U-shaped tubes having a heating area of 162 sq. in. These tubes are completely surrounded by glycerine in which 16 ft. of fuel oil line is submerged and the glycerine transfers its heat to the oil at the proper temperature.

The heat of the Thermeron is controlled by means of a sylphon bellows valve which is actuated by the expansion and contraction of the glycerine. This in turn operates the hot exhaust valve allowing more heat or less heat to pass through as required and consequently constant temperatures are retained.



Left—Drive flange and hub showing driving dowel and stud of rear axle

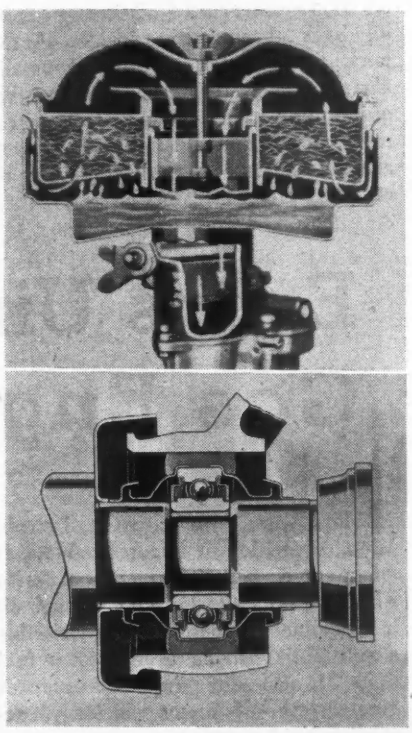
GMT Struts Style and Pares Prices for 1936

Distinctive Tailoring of Front-End Features 1936 Truck Line; 12 Models From ½ to 5-10-Ton Range in Price From $425 to $5175

LOWEST prices and the most complete line in its entire history are announced by General Motors Truck Co., Pontiac, Mich., in launching its new line for 1936. A variety of standard equipment features, mechanical options, and deluxe equipment is expected to cover almost every requirement of the truck buyer.

Perhaps the most striking thing about the 1936 GMC models is a new and distinctive tailoring of front end sheet metal cab, fenders, radiator, hood, etc., which carries the same modern note throughout the entire line. It is interesting, too, to find that this styling, although fresh and modern, is designed to express the essence of utility, strength, and massiveness of load-carrying vehicles.

The 1936 line leads off with the new ½-ton Model T-14 bearing a base price of $425. The group of three low-priced jobs—Model T-14, T-16, and T-16H—have the "213" power plant, used in the T-16 last year, which includes a number of added refinements. Three new engines with many important features for truck service are introduced with this line. T-18 and T-18H have the "239"; T23 and T23H have the "257"; and T-33 and T-33H have the "286" engine. The "331" and "400" series engines remain unchanged. Both the T-61 and T-61H which have the "400" engine may be fitted with the standard "450" at extra cost.

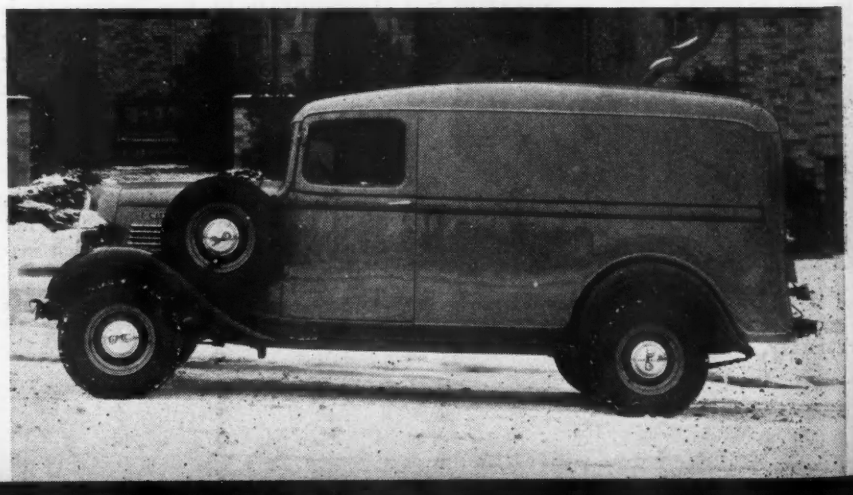


The "H" series models listed this year indicate companion models having the same chassis features but using the rear end assembly of axle, springs, etc., of the next largest model, thus increasing its load-carrying capacity.

ALL models in the line, except the T-14, T-16 and T-16H, now have set back front axles, thus offering standard SAE loading spaces within relatively shorter wheelbase lengths. Dual performance rear axles are available at extra cost on models T-16 to T-46 inclusive, providing increased power in the low range and faster running speed in the high range positions.

Improved brakes are a feature of all

Left top—Down draft carburetion showing oil bath air cleaner and automatic heat control. Left—Cutaway showing rubber encased center bearings. Below—GMT's smart ½-ton panel job



Left—Showing GMT's distinctive front-end. Cabs are de luxe equipped. Below—Model T-46C, 178-in. wheelbase chassis with specially designed drop skirt stake body has plenty of eye appeal

models. Hydraulic brakes are found on the lighter jobs T-14 to T-18H inclusive; hydraulic brakes with vacuum power on T-23 to T-46 inclusive; and air brakes on the T-16 and T-61H.

Governors are standard equipment on all models from T-18 on. The new Leibing velocity governor has been adopted for models T-18 to T-33H inclusive while the Handy governor is continued on T-46, T-61 and T-61H.

A new rubber-encased, propeller shaft center bearing is now a regular feature of every model in the line, above T-14. The heart of this unit is a permanently greased and sealed self-aligning ball bearing mounted in a rubber ring. The rubber mounting prevents the telegraphing of axle and transmission noises and at the same time is said to produce a trouble-free job which does not require lubrication or inspection during the life of the vehicle.

ANOTHER vital feature common to light and medium-duty models is the rear axle flange stud construction in which all the studs transmitting torque are fitted with tapered dowels. This is said to produce a permanent non-loosening connection and consequently is expected to assure trouble-free service at this point.

One of the most attractive appearance features of the entire line is the availability of an unusual variety of color options at no extra cost, quite comparable to common passenger car practice. Thus the truck buyer can select from a group of 12 colors for his color scheme on any model without extra cost or delay. In addition there is a special choice of seven deluxe color combinations on any model which specifies any of the deluxe options. This, too, is at no extra cost to the buyer.

The following is a brief résumé of engine specifications as well as the special features of the new power plants. The "213" is an L-head, six-cylinder, 3 5/16-in. bore x 4⅛-in. stroke, 213.3 cu. in. displacement. It is rated at 84 hp. actual at 3500 r.p.m. and produces a maximum torque of 152 lb. ft. at 1200-2500 r.p.m.

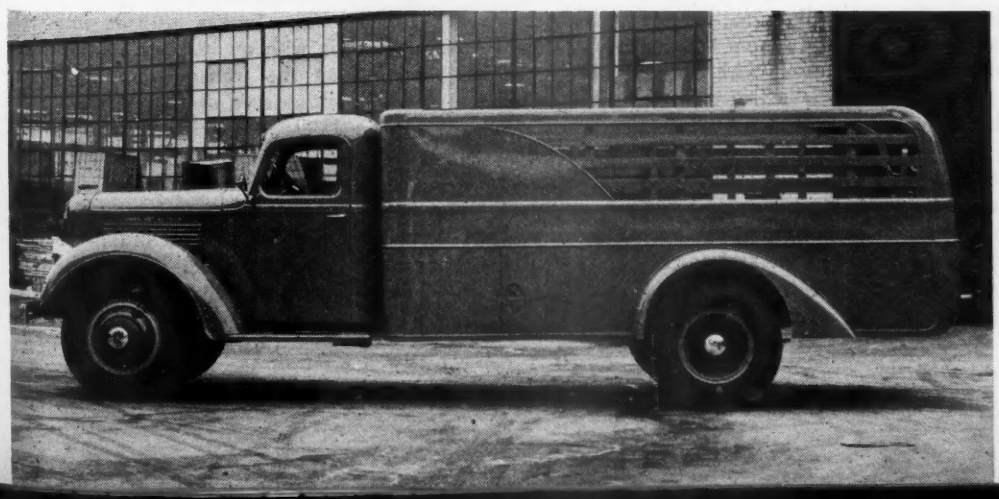
The "239" engine is a valve-in-head six-cylinder, 3 5/16-in. bore x 4⅝-in.

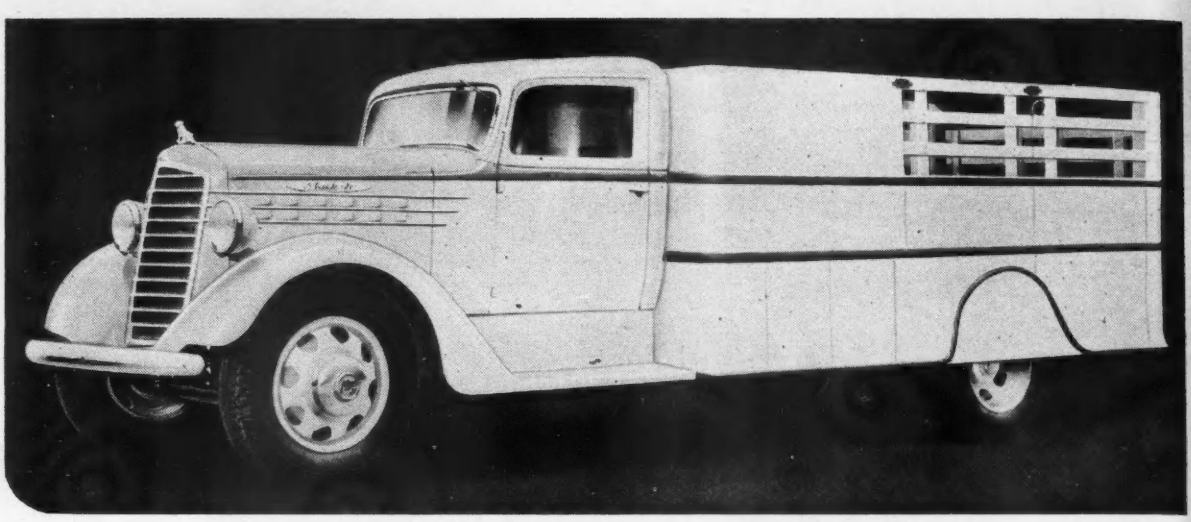
(TURN TO PAGE 118)

GMT 1936 PRICES

Model	Ton Range	Engine	Base Price
T-14	½	213	$425
T-16	1½-3	213	525
T-16H	1½-3½	213	645
T-18	1½-4	239	815
T-18H	1½-4½	239	895
T-23	2-4½	257	1,285
T-23H	2-5	257	1,515
T-33	2½-6	286	1,785
T-33H	2½-6½	286	2,135
T-46	3½-7	331	2,485
T-61	4-8	400	4,835
T-61H	5-10	400	5,175

Dual performance axles available optional or extra cost in models T-16 to T-46, inclusive. Set back front axle on models T-18 to T-61H, inclusive.





Above—Mack Jr. 166-in. wheelbase truck with gross rating of 11,500 lb. Opposite page—Front-end view showing large fender design and chrome grille and de luxe panel board

Mack Makes History With a Junior Line

Breaks With Traditional Policy of Building Only Heavy-Duty Vehicles and Announces Low Price Line of Seven Models Ranging from $535 Up

MACK TRUCKS, INC., has entered the low-price truck and bus field with a line of light Mack Jr. trucks and buses in seven models, which range from a ½-ton truck priced at $535, to a 2-3-ton truck priced at $1,035. The Jr. line will also contain a short-wheelbase traffic type model.

The Mack Jr. bus models, priced from $2,700, complete, are available in three designs, including two transit type and one conventional type. One of the transit type models will be available with a front-mounted engine; the other with the engine mounted in the rear. The conventional type bus will have an engine in front. Both trucks and buses in the Jr. line will be serviced through the company's direct factory branches.

The introduction of this new line is a radical departure from the company's policy of manufacturing only heavy-duty commercial motor vehicles. Every unit has been proven by at least three years of service covering all types of work. In many cases mileages of 100,000 miles per year have been run up by these trucks.

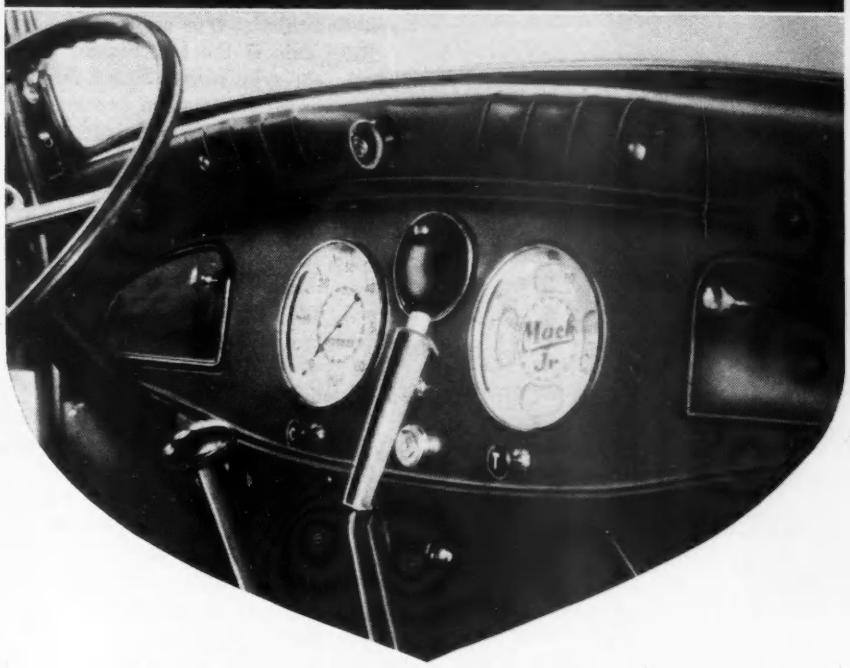
THE ½-ton truck will have a wheelbase of 118 in. with a gross rating of 4500 lb. The 1½-ton truck, with a gross rating of 10,000 lb. will be available in 139 and 166-in. wheelbases and in special wheelbases ranging from 170 in. to 190 in. The 1½-ton to 2-ton truck, with a gross rating of 11,500 lb. will be available in 139 and 166 in. wheelbases and in special wheelbases ranging from 170 in. to 190 in. The 2 to 3-ton model, with a gross rating of 13,500 lb., will be available in 142 in. and 166 in. wheelbases, as well as in the special wheelbases ranging from 170 in. to 190 in. The Traffic Type in the 2-3-ton truck will have a 166 in. wheelbase with special wheelbases up to 190 in. and a special 139 in. tractor wheelbase.

The ½-ton truck Model 1M will be powered with a six-cylinder engine which will have alloy iron cylinders, full-pressure lubrication, Lo-Ex aluminum pistons and Stellite valve inserts. This engine will have a bore of 3 3/16 in. and a stroke of 4⅜ in. with a 209-cu. in. piston displacement and a brake hp. of 72 at 3000 r.p.m. It will have a 5.4 to 1 compression ratio and a maximum governed speed of 3000 r.p.m.

The clutch on this model will be single plate with 94¼ sq. in. frictional area. Transmission will have three speeds. The brakes will be internal hydraulic with an external hand-brake acting on the transmission, giving a total braking area of 170 sq. in.

The 1½-ton Model 10M truck will employ an engine of 209 cu. in. displacement, a clutch with an area of 94¼ sq. in., four-speed transmission and a 295¼ sq. in. total braking area.

The 1½-2-ton Model 20M truck will also be powered with a six-cylinder en-



gine with a piston displacement of 228 cu. in., a 5.4 to 1 compression ratio, a brake horsepower of 74 at 3000 r.p.m., and will have a maximum governed speed of 3000 r.p.m. It will have chrome-nickel cylinders, full-pressure lubrication, Lo-Ex aluminum pistons and Stellite valve inserts. This engine will have seven main bearings, a bore of 3⅜ in. and a stroke of 4¼ in. The transmission will have four speeds with five speeds available at extra costs.

The 2-3-ton Model 30M truck of 13,500 lb. gross rating, will be powered with a six-cylinder engine with chrome-nickel cylinders, full-pressure lubrication, Stellite valve inserts, and will have a brake hp. of 85 at 3000 r.p.m. This engine will have a bore of 3⅜ in. and a stroke of 5 in. It will have seven main bearings and a maximum governed speed of 3000 r.p.m., with a 5.51 to 1 compression ratio. It will use a single plate clutch with 131 sq. in. frictional area.

The transmission will have four speeds with five speeds optional at an extra cost. The brakes on this model will be internal hydraulic, with a handbrake acting on the transmission and a total braking area of 350¼ sq. in. The brakes will be actuated by a BK booster.

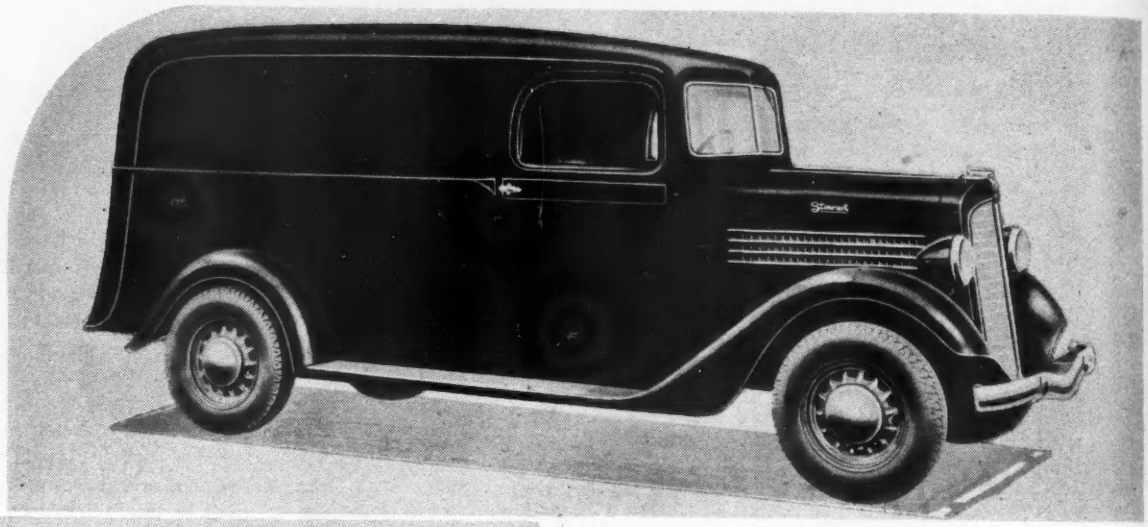
The conventional type bus with the engine in front will be available in wheelbases from 166½ in. to 190½ in. and will seat 21 passengers. Standard equipment on this model will include oil bath, air cleaner, six-volt bus electrical equipment, radiator ornament, all instruments, 38-gal. gas tank, two stage springs, six tires and insulated engine compartment. It will have 75 brake hp. at 2800 r.p.m., seven main bearings, four-speed transmission, drop type frame, hydraulic brakes, and will be available in bodies built to customers' specifications.

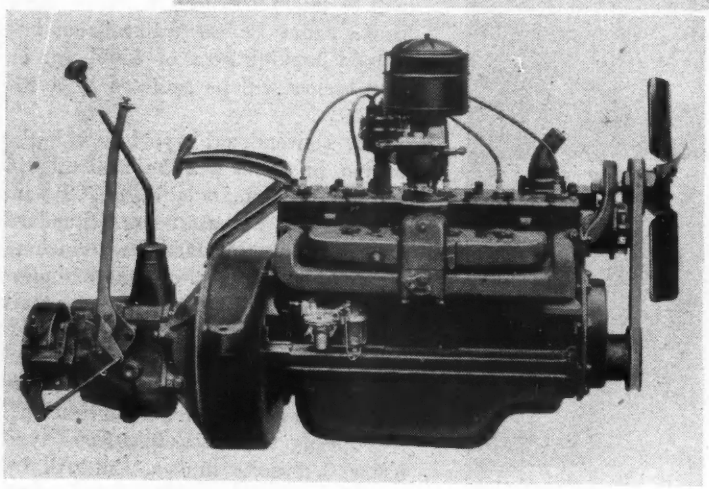
The Transit Type bus with the engine in front will have a chassis weight of 4000 lb., and will be available in wheelbases ranging from 166½ in. to 190½ in. It will seat 21 passengers and its standard equipment will be the same as on the conventional type bus.

In appearance the new Mack Jr. line will be featured by large fenders, an abundance of chrome plating, a chrome grill, de luxe hub caps and bumpers and forged disc wheels.

A FEATURE available on the 10M, 20M and 30M models will be a two-speed under-drive rear axle, which has been proven through years of operation. By the operation of a lever in the cab the under-drive additional ratio of 1.5 to 1 can be brought into operation to give ample gear reduction for hill climbing ability. This feature will save oil, gas, time and wear and at the same time promote greater all-round truck efficiency.

The entire line will employ unusually sturdy chassis. The 1½ to 2-ton model will have helper springs, dual tires, oil bath air cleaner and so many other refinements that by adding a de luxe cab the purchaser will have a truly outstanding job at a low price.





Above—Stewart's new ¾-ton Model 60-H panel body is available in 6½, 7 and 8-ft. lengths. Left—Six-cylinder engine develops 60 hp. at 2800 r.p.m.

Stewart Lists ¾-Ton at $545

Model 60H Features Six-Cylinder Engine Developing 60 Hp., Four-Wheel Hydraulic Brakes, Synchro-Mesh Transmission; Wheelbases Are 120 and 128 In.

THE Stewart Motor Corp., Buffalo, N. Y., announces production of a new ¾-ton chassis, known as Model 60H, at $545.

This new Stewart is all-truck throughout. The motor is a six-cylinder with 3-in. bore and 4-in. stroke and a full floating rear axle that is a feature for this size truck. Other features are a 10-in. clutch, 13-in. hydraulic brakes, synchro-mesh transmission and oversize electrical equipment.

The Continental engine is truck-type in construction and gasoline tests show marked economy. The piston displacement is 169.6 cu. in. and develops 60 hp. at 2800 r.p.m. It is equipped with force-feed oiling system, down-draft carburation, air cleaner and fuel pump. The crankshaft bearings are steel backed.

The radiator is of the pressed steel shell, chrome front, "V" type with a modified tubular type core.

Rear axle is the full floating spiral bevel gear type with a heavy differential mounted on Timken bearings. It is supplied in a standard gear ratio of 5.1:1 or optional of 4.27:1.

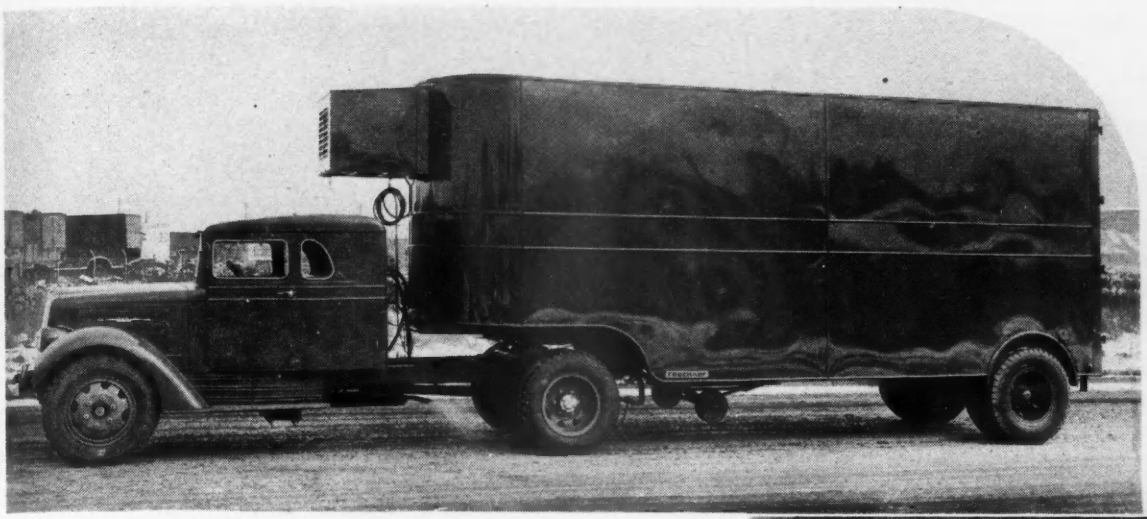
THE front springs are 38½ in. long by 1¾ in. wide equipped with eight leaves of alloy steel. The rear springs are 50 in. long by 2 in. wide, having 12 leaves of alloy steel. Front and rear springs are equipped with bronze bushings and ¾-in. spring pins.

Service brakes are Lockheed 4-wheel hydraulic, 13 in. by 2 in. all around, operating against cast steel drums. Emergency brake operates on rear of transmission. The universal joints are the latest type Spicer roller bearing.

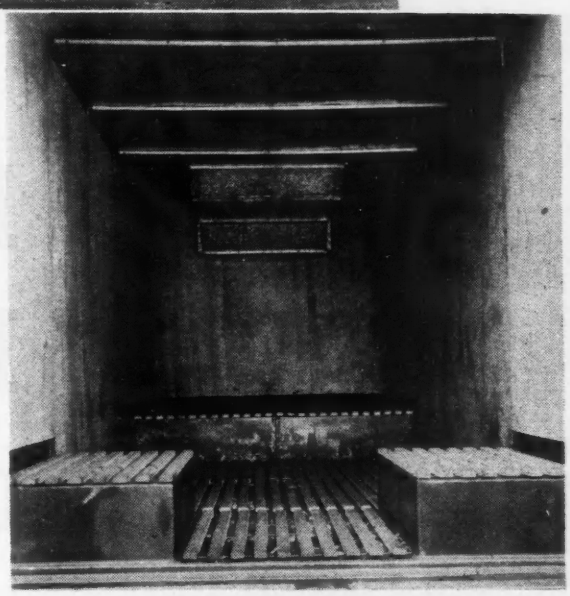
Tires of 6.00 x 16 six ply standard equipment, with an oversize of 6.50x16 and 7.00x16 at extra cost.

Two wheelbase lengths are supplied —128 in. for 8-ft. bodies and 120-in. for 6½ and 7-ft. bodies. The standard chassis weighs 2325 lb.

Several body styles are available for this ¾-ton: a panel in 6½, 7 and 8-ft. lengths, a steel pick-up in 6-ft. 8-in. and 8-ft. lengths and a covered express in 7 and 8-ft. lengths. A modern "V" type cab with sloping windshield and one-piece steel roof is also available.

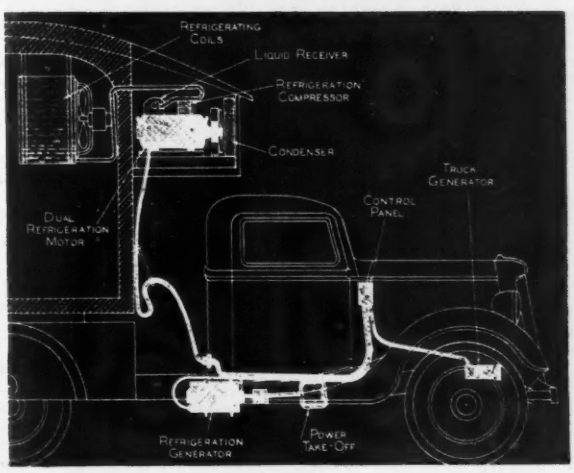


Above—Fruehauf refrigerated trailer with cooling unit projecting from nose. Right—Interior view of trailer showing location of air ducts at roof and front. Below it is a diagrammatic view of refrigerating system



'The Berries' for Berries

Fruehauf "Semi" Equipped with New Refrigerating Unit Makes Hauling Florida Strawberries a Full Thousand Miles Just a Bowl of Berries



THOUSANDS of breakfast tables in New York City and Philadelphia clamoring for strawberries—acre upon acre of luscious fruit ripening in the Florida sunshine. How to span that thousand miles so that the northern appetite might be satisfied?

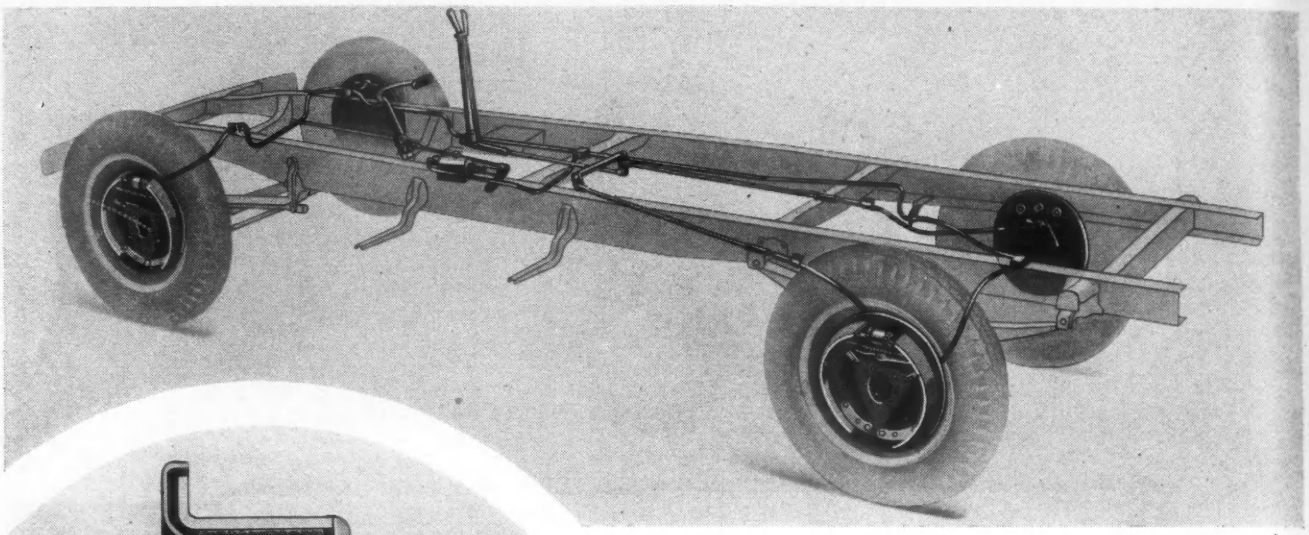
That's the problem John S. Barnes Co., Plant City, Fla., put up to the Fruehauf Trailer Co. They had to move the berries in a hurry at low cost and at the same time handle them in a way that would preserve that special Florida flavor.

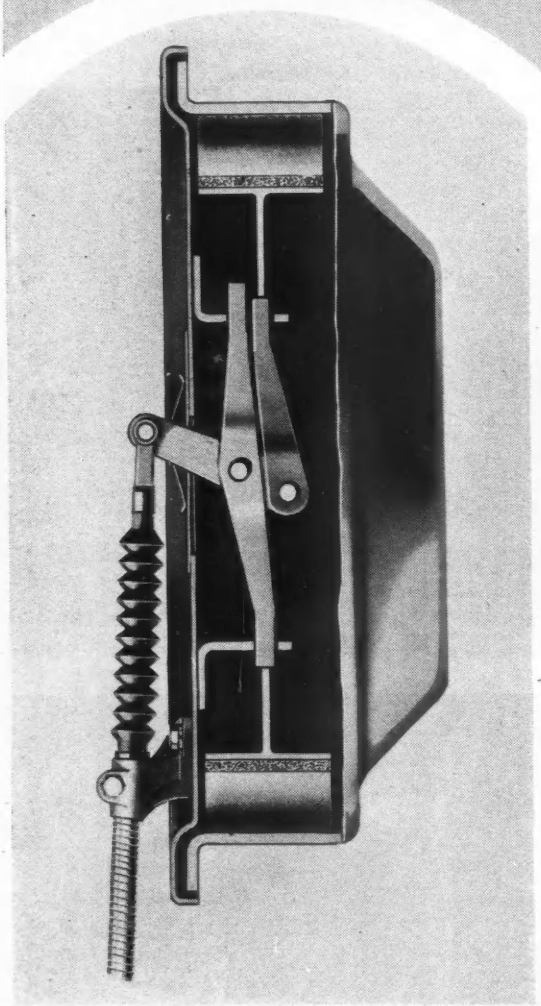
Out of this requirement was born a new refrigerated trailer, illustrated here, which features a novel mechanical refrigeration system developed by Kelvinator and the Century Electric Co. This trailer, one of a fleet of four, accommodates 457 crates of strawberries with 32 quart measures to the crate, a grand total of 14,624 quarts per load. When the fleet gets into action, each load will feed about 58,000 hungry mouths. The trailer body is so proportioned that the overall length of the tractor-trailer is less than 35 ft., thus making it safe to plan a long interstate route.

Strawberries may not be heavy but the load per unit runs close to 16,488 lb. And since this much material would require more refrigeration than a mobile unit can profitably carry, the practice is to precool the berries in a storage warehouse and prepare them for the road at a temperature of around 34 deg. Fahr., just above freezing. The effect of this chilling lasts almost eight hours in transit so that no power is required for at least that length of time. In the meantime, the trailer cooling system gets on the job and makes sure that the valuable cargo is kept between 36 to 38 deg. Fahr. all the time.

It is estimated that the cost of operating the refrigerator system will run

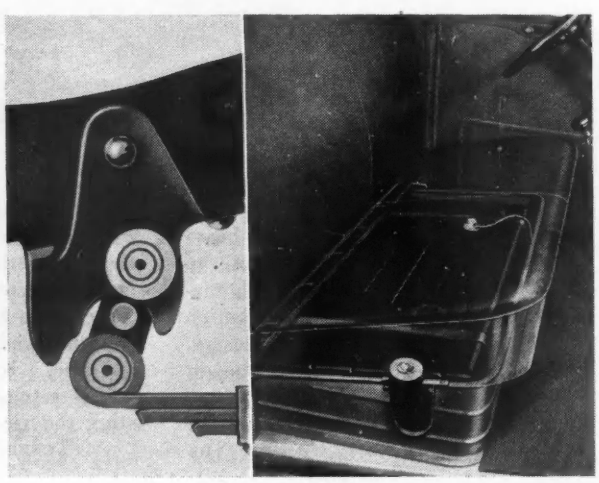
(Turn to Page 71, Please)





Hydraulics Are Feature of 1936 Chevrolet Line

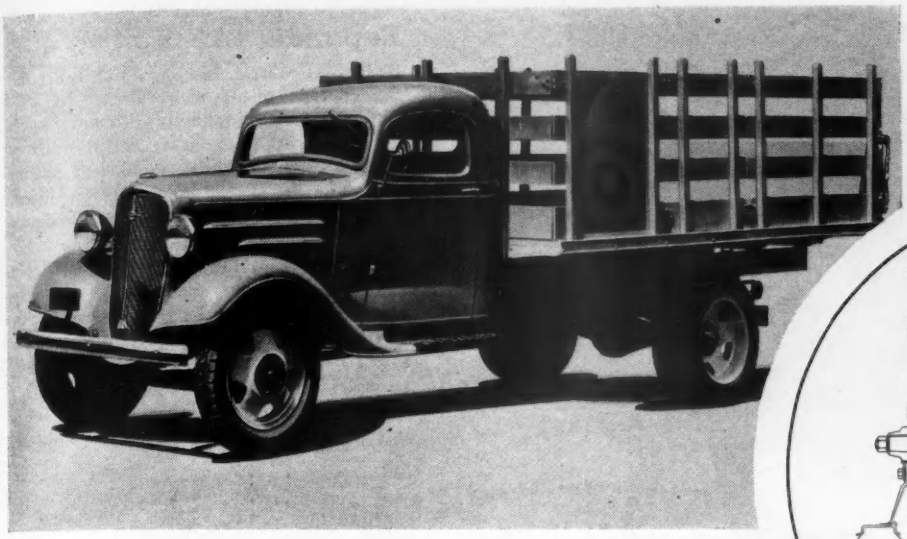
Other Developments Are Full Length Water Jacket, Higher Compression and Redesigned Cab; 1½-Ton Has Full Floating Rear Axle



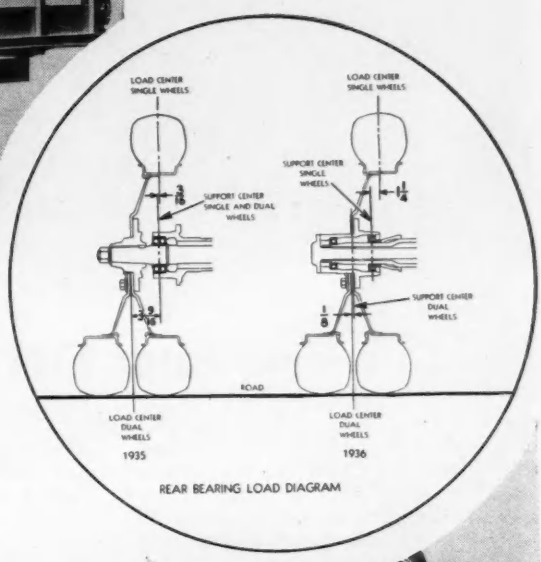
Top—Showing brake layout of Chevrolet's 1½-ton with master cylinder mounted on frame. Above—Design of the 1½-ton rear wheel brakes with hydraulic mechanism omitted to show lever and connecting rods of the emergency brake. Right—Front spring hanger of the 1½-ton is provided with two safety stops. The photo next to it shows the fuel tank mounted under the seat

NEW Chevrolet trucks for 1936, comprising a wide range of standard body types, mounted on half-ton and 1½-ton chassis which carry numerous advances in engineering and improvements in operation, are announced by Chevrolet Motor Co. Design changes, including a restyling of the sheet metal and the adoption of a coupe type cab with solid steel top, have enhanced the appearance of the 1936 models.

In the chassis, the most noteworthy development is the adoption of hydraulic brake operation with improved brake mechanisms at the wheels. Engine improvements include increased power, better fuel and oil economy,



Left—1½-ton truck with stake body showing redesigned cab with one-piece steel top



REAR BEARING LOAD DIAGRAM

and greater durability. The major change in the engine is the use of full-length water-jackets, in combination with higher compression ratio—6 to 1.

THE 1½-ton chassis now has a full-floating rear axle and a stronger housing that includes a malleable iron differential case and seamless steel axle tubes. Rear axle loads are carried on the housing, instead of on the axle shafts, which now have only to drive the wheels.

Passenger car comfort for the driver is offered in the new coupe type cab, which presents a streamline appearance and reduced over-all height in an all-steel structure having a one-piece solid steel top. The cowl, windshield, turret top, and cab proper are combined in a single unit, riveted and welded together and reinforced by steel braces. The underbody is sheet steel, welded to the sides. The doors also are entirely of steel, while the cab interior, including instrument panel and door panels, is trimmed with steel having a crackled finish in brown, matching the upholstery. The seat back is adjustable. The windshield, which slopes at an angle of 16 deg., may be opened by a crank regulator. Dials in the instrument panel are grouped in front of the driver; a package compartment is provided at the right side.

The sloping "V" radiator is wider at the base; the grille is chromium plated. The new hood has two horizontal louvres, above which is mounted a large Chevrolet trade-mark emblem. Front fenders, extending lower in front, have deep skirts at the sides, concealing the chassis parts. A new convex chromium front bumper bar has been added to the 1½-ton model.

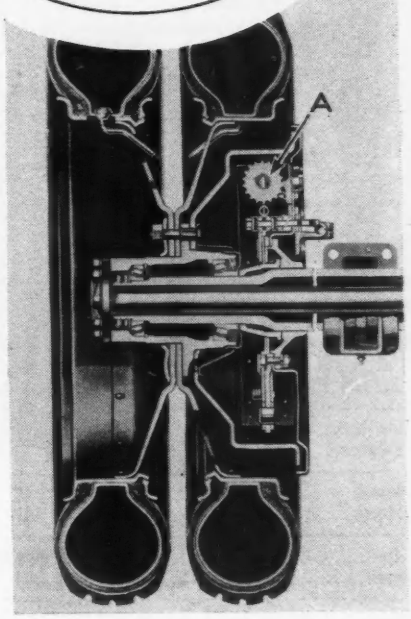
IN changing to hydraulic brakes on both chassis models, Chevrolet has applied this principle of brake actuation to its own design of brake shoe mechanism. The master cylinder is mounted on the frame in the 1½-ton model, and on the clutch housing of the half-ton. The master piston is 1 in. in diameter on the half-ton and 1¼ in. on the 1½-ton. Wheel piston diameters are varied in diameter to procure proper distribution of braking effect at the front and rear wheels.

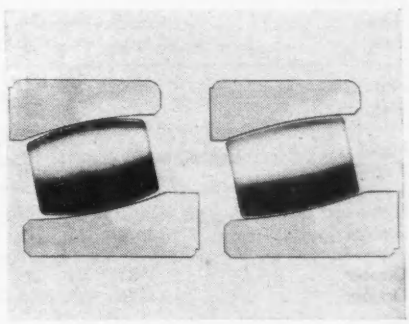
The hand brake lever operates the rear service brakes. The connection is by flexible cable, attached to a lever and toggle mechanism within the brake drums.

On the half-ton, brake drums are of composite construction, having a cast iron rim and a pressed steel web. The outer surface of the drum is machined in deep grooves that form five ribs for cooling. On the 1½-ton, the effective brake lining area is 330 sq. in., or 56.6 sq. in. more than formerly.

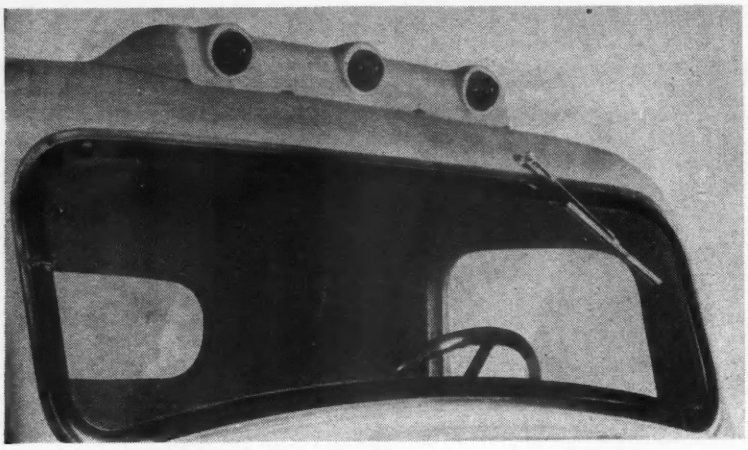
Engines of the two chassis models are identical in design and in horsepower and torque. Maximum horsepower is 72 at 3200 r.p.m. At 1000 r.p.m. horsepower is 30; at 2000, it is 57½. Maximum torque is obtained over a wide range of engine speeds, 155 lb. ft. being maintained between 900 and 1500 r.p.m. The increase in compression ratio to 6 to 1 is credited with effecting a 6 per cent improve-

(TURN TO PAGE 68, PLEASE)





Above—Diagrammatic view of the new barrel type roller bearing used in the full floating rear axle. Circle—This diagram shows the comparison between the loading of rear axle bearings of 1935 and 1936 models. Center—Sectional view of Chevrolet's new full floating rear axle



Flexible Ventilator Fits Any Cab

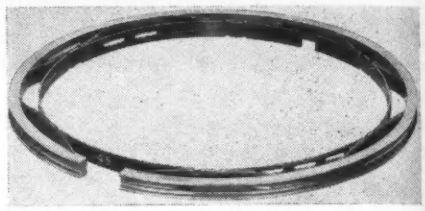
THE Nichols-Lintern Co., Cleveland, Ohio, have introduced a new flexible ventilator. It is made of pliable rubber and is designed to fit roof curvature. It is thoroughly weathertight. It is supplied plain or equipped with three safety lights.

This ventilator is meant to be installed after the truck is built and it can be easily and inexpensively installed. Foul air containing carbon monoxide is removed and constant circulation without drafts is created as long as the truck is in motion. In addition, steam and fog are prevented from forming on the windows.

Expander Piston Ring

PERFECT Circle has announced an expander type piston ring said to be new in principle and radically different in design. The X-90, as it is called, utilizes a series of independent double-leaf spring units equally spaced on a carrier band. Each of these springs operates independently, exerting a pressure against the inner circumference of the ring. Perfect Circle engineers claim the efficiency of the ring to be unaffected by the ring groove depth and that it will contact tapered and out-of-round cylinders effectively throughout the stroke.

The Perfect Circle Co., Hagerstown, Ind., is supplying the X-90 ring as a compression or as an oil control ring. Standard and three oversizes—.020, .040 and .060 in.—are available.



Expander type piston ring

New Truck Registrations by Makes by Months

	Autocar	Brockway	Chevrolet	Diamond T	Dodge	Federal	Ford	G. M. C.	International	Mack	Reo	Sterling	Stewart	Studebaker	White-Indiana	Miscellaneous	Total
January 1935	71	86	9,867	550	5,141	152	13,260	858	3,513	114	380	10	42	127	308	280	34,759
January 1934	79	91	8,917	406	2,581	120	6,650	555	2,284	161	289	9	61	98	284	318	22,903
February 1935	41	54	11,701	499	3,271	113	14,330	570	3,174	63	292	10	34	107	217	321	34,797
February 1934	58	81	10,718	420	2,723	121	6,459	453	2,150	144	339	14	60	109	357	270	24,476
March 1935	56	67	13,744	534	4,284	132	16,805	850	3,673	100	389	14	60	135	258	410	41,511
March 1934	64	117	15,112	501	4,154	170	8,632	717	2,841	145	461	10	67	126	452	315	33,884
April 1935	79	109	15,024	568	5,708	177	17,943	870	4,554	159	449	31	62	189	309	554	46,785
April 1934	88	104	15,050	534	4,367	178	13,167	839	2,729	206	527	4	90	123	558	318	38,882
May 1935	78	97	16,284	570	5,381	193	17,591	883	4,807	189	616	5	60	229	294	691	47,968
May 1934	146	117	14,148	508	4,441	186	14,390	1,031	2,849	212	578	10	103	193	544	375	39,831
June 1935	73	113	17,576	572	4,911	178	17,385	901	4,710	103	439	16	69	218	258	721	48,243
June 1934	95	108	12,981	481	3,729	196	12,205	884	2,435	154	504	9	67	133	447	350	34,778
July 1935	99	114	18,608	593	5,336	202	18,073	857	5,308	147	439	19	85	219	336	808	51,243
July 1934	99	147	14,704	457	4,224	182	12,492	951	2,548	202	416	17	67	156	396	432	37,490
August 1935	91	143	18,554	591	5,723	219	16,429	1,312	5,231	145	476	9	94	264	354	720	50,355
August 1934	61	107	15,790	508	4,754	162	14,055	1,033	2,809	143	439	15	56	138	337	383	40,790
September* 1935	75	106	13,271	529	5,635	196	13,715	1,307	4,963	81	385	9	90	167	350	511	41,390
September 1934	118	74	15,159	420	4,086	158	12,250	1,240	2,538	103	369	3	31	153	238	285	37,225
October* 1935	92	129	9,150	557	6,822	198	12,362	907	5,350	136	412	17	94	209	544	460	37,439
October 1934	169	118	15,723	535	4,669	200	13,544	1,106	3,238	146	364	16	52	212	460	326	4,878
November* 1935	89	116	10,875	378	4,642	227	14,191	783	4,136	137	273	17	91	137	436	407	36,935
November 1934	85	79	11,296	305	3,868	150	8,060	886	2,626	116	393	8	40	131	336	310	28,689
11 Months 1935	844	1,134	154,654	5,941	56,854	1,987	172,084	10,098	49,419	1,374	4,550	157	781	2,001	3,664	5,883	471,425
11 Months 1934	1,062	1,143	149,588	5,075	43,596	1,823	121,904	9,695	29,047	1,732	4,679	115	694	1,572	4,409	3,682	379,816
% Change 11 Months	−20	−1	+3	+17	+30	+9	+41	+3	+70	−20	−3	+36	+13	+27	−17	+60	+24

*Revised to exclude bus registrations.

"..anxious to reduce costs"?

BLACK HAWK MOTOR TRANSIT LINES
GENERAL OFFICES
306 NORTH JEFFERSON AVENUE
PEORIA, ILLINOIS

April 27, 1935

Bendix Stromberg Co.
South Bend, Indiana

Gentlemen:

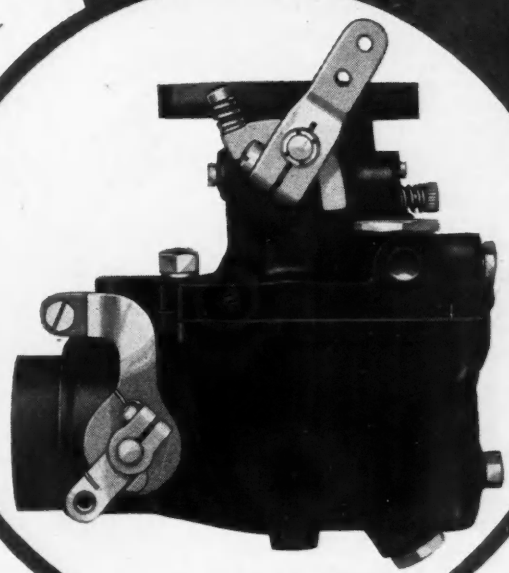
Last summ... instal... buses. The Stromberg Carburet... four... better results in less g... onsum... ced that we take forming motors h... en s... ur product to other pleasure in rec... ding ... anxious to reduce costs. Bus operators w... re

The ...ng we have made in gas bills, is self-eviden... the unseen benefits of smoother perfo... motors has been of equal importance.

Black Hawk Motor Transit Co.

General Manager.

POJ:B



Stromberg "SF" Carburetors follow the only principle of carburetion which has proved successful for all heavy-duty work. Handles all high speed, heavy-duty engines. Built in 5 sizes, moderately priced. Available with or without accelerating pump and Vacuum Economizer, and usable with or without governors.

The *"heavier"* the duty the *more* Stromberg economy *saves!*

STROMBERG carburetor efficiency may sometimes mean simply more pep and speed—hence *more fun,* to a carefree pleasure-car owner. But a heavy-duty truck or bus engine is something else again! Here Stromberg fuel-saving means big money—profits—dividends as a matter of fact!

Carburetors *wear out.* When you overhaul your engines put in a new Stromberg heavy-duty "SF" and watch what it does to performance! Whatever it is you're after, Stromberg will give it to you—easier starting, more power, more speed, faster pickup, smoother running or more miles per gallon. And remember, the "heavier" the duty, the more Stromberg economy saves!

BENDIX PRODUCTS CORPORATION
(*Stromberg Carburetor Division*)
401 Bendix Drive South Bend, Ind.

STROMBERG CARBURETORS

A BENDIX PRODUCT

New Products on Parade

Descriptions of the Latest Items Put on the Truck Market by Equipment and Specialty Manufacturers

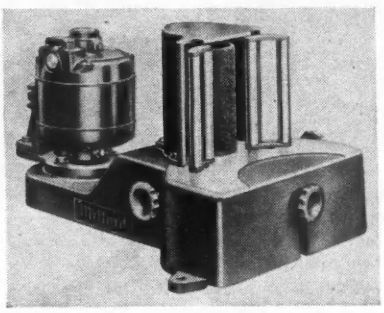
Brake Tester

THE brake safety-meter, built by the Gatke Corp., 228 N. La Salle St., Chicago, is a power-driven brake tester for passenger cars and light trucks. It is claimed to be extremely sensitive, detecting the slightest variations in brake-drum contour. It operates from a standard light socket, and measures the brake efficiency electrically. The complete outfit weighs 100 lb. and sells for $97.50.

Gatke power-driven brake tester

Brake Lining Equipment

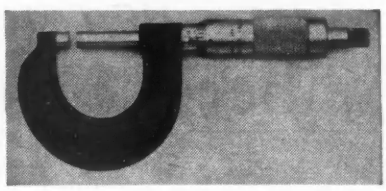
THE Raybestos air-liner combination includes a pneumatic riveter, carboloy countersinks and the No. 825 brake lining grinder. The riveting machine operates on 80 to 100 lb. air pressure, and a light touch of the foot treadle puts into action a predetermined force with constant riveting pressure at every portion of the stroke. The carboloy-tipped countersink is said to give exceptionally long life, even with heavy brake lining. The No. 825 brake lining grinder will handle all sizes of shoes up to 6 in. wide. The Raybestos Div. of Raybestos-Manhattan, Inc., Bridgeport, Conn., manufacture this equipment.



Raybestos brake lining equipment

Micrometer Caliper

THE NO. 11 Brown & Sharpe micrometer caliper has been redesigned, and the frame is now of the C type, I section. The anvil projects 3/16 in., which makes it convenient for measuring keyways, counterbores, etc. The graduations on the barrel are made alternately long and short to facilitate reading, and the figures on the thimble have been increased in size. This tool is a product of the Brown & Sharpe Mfg. Co. of Providence, R. I.

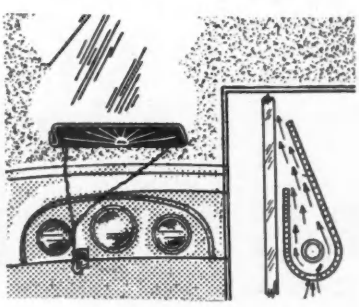


Brown & Sharp micrometer caliper

Sunburst Defroster

THE NO. 138 Sunburst Defroster, manufactured by H. E. Williams Products Co., Carthage, Mo., is a miniature warm air furnace. Cool air flows in through holes at the bottom, is heated, and then rises in a warm blanket against the inner face of the windshield. A clamp-on plug-in socket is furnished to be mounted on the dash.

Sunburst windshield defroster



Wico Magneto

A NEW ignition magneto of the inductor type has been announced by the Wico Electric Co., Springfield, Mass. The new series Ap magnetos embody the features of rotating magnets, stationary coil, fixed interrupter, and rotating cam. The magneto housing consists of an aluminum die-casting cast around the laminated pole shoes of silicon steel.

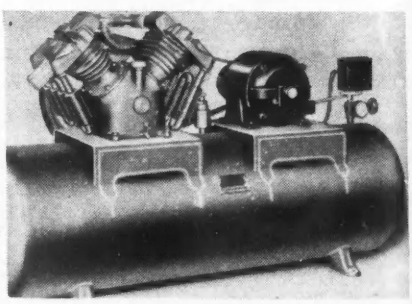
The distributor rotor is of Bakelite. The breaker arm is also of Bakelite construction with a large-size breaker shoe. A self-lubricating bushing is pressed into the breaker arm and bears on a hardened steel bushing over a pivot which is integral with the breaker-box assembly. The forged tungsten contact point is welded to a plate which in turn is riveted to the breaker arm. The fixed contact is also of forged tungsten and is provided with an eccentric adjustment.

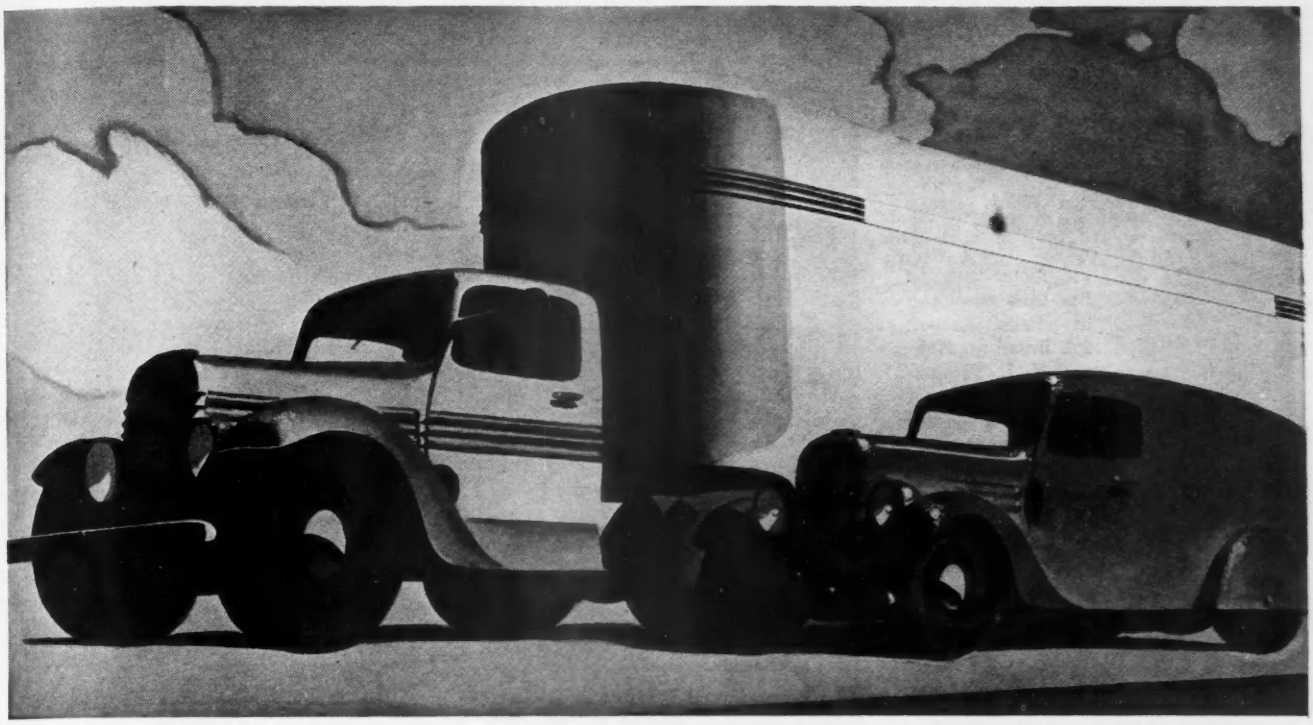
Par Air Compressor

MODERN Equipment Corp., Defiance, Ohio, is supplying Par air compressors in four sizes: ½ hp. for tire pumping service, 1½ hp. for the lubrication station, 3 hp. for the super-service station, and 5 hp. for the fleet and larger dealer stations. The smallest outfit is furnished with a two-cylinder vertical compressor, while the three larger models have four-cylinder V type compressors, all of two-stage design. A fin type inter-cooler and after-cooler, intake muffler and air filter and automatic unloader controller are included in each outfit.

[More Products Page 42]

Compressor for tire pumping service





THERE'S AN ECONOMICAL EXIDE FOR THEM ALL

If you are operating a fleet of light delivery cars in or around a congested area, the battery in each car may have to crank the engine dozens of times a day. Can there be any possible advantage in using less than the longest-life battery you can buy?

If you are operating tractor-trailers on the highway, with long hauls and plenty of night driving, a starting and lighting failure is not a trivial matter. Can you afford to handicap your equipment and your drivers with anything except unfailingly dependable batteries?

If you are an operator of any kind of equipment between these two extremes, the increased dependability, the saving in time both in the shop and on the road, and the reduced maintenance costs with Exide Batteries are advantages that you cannot profitably pass by.

These are proved advantages with Exide Automotive Batteries—proved in actual service by operators everywhere, over a period of 25 years. Exide Engineering Service, conducted by trained and experienced battery engineers, is available to fleet operators, free. Why not start now to save money with Exide?

THE ELECTRIC STORAGE BATTERY CO., Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

EXIDES FOR DIESEL STARTING

Specially constructed Exides of three different types have been developed for Diesel starting. Packing maximum power into minimum weight and space, these special Exides meet the low-temperature starting requirements of all high-speed Diesels.

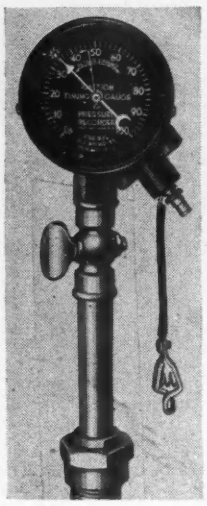
Exide
BATTERIES
FOR EVERY TYPE TRUCK

NEW PRODUCTS ON PARADE

(Continued from Page 40)

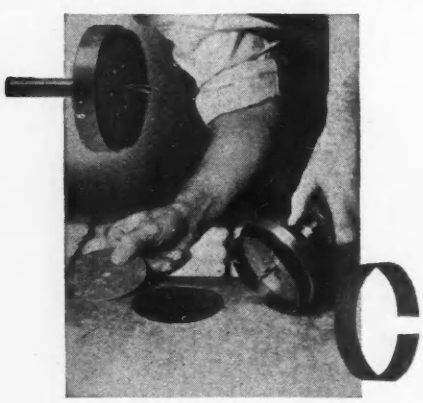
Timing Gauge

A COMBINATION ignition timing gauge and compression recorder which gives a dial reading of ignition timing with the motor running has been developed by Paul Kreiszl, 212 Broad St., Newark, N. J. To operate, remove one of the spark plugs and insert the gauge, attaching the spark plug lead to the gauge clip. If the motor idles as slowly as possible the white pointer will synchronize with the piston travel, and a flash will indicate the exact point of ignition. The recorder pointer shows and holds the compression reading.



Atkins Hole Saw

THE Atkins hole saw can be used in a hand drill or a drill press for cutting holes in wood, bakelite or metal sheets. The blades are replaceable in a permanent holder, eliminating the necessity of discarding the holder when only the blade is



worn out. Blades can be supplied with 6, 8, 10 or 14 teeth to the inch. This saw will cut holes from ⅞ to 4⅛-in. diameter. E. C. Atkins & Co., 402 S. Illinois St., Indianapolis, Ind., is the manufacturer.

Helper Springs

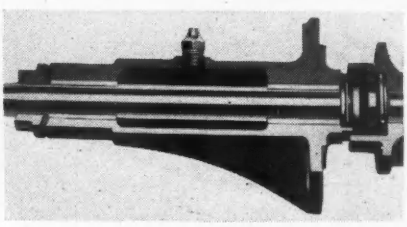
SERVICE SPRING CO., 735 St. Paul St., Indianapolis, Ind., is marketing the No. 134 helper spring for Chevrolet 1½-ton trucks. This spring has six heavy leaves, 2½ in. wide, two of which extend full length. A specially designed spacer block is claimed to insure strength and proper fitting of the spring. This company has also just announced a new helper spring model FV-836 designed for the 1936 Ford ½-ton truck.

Fender Straightening Tool

A PNEUMATIC fender straightening tool is being made by the Chicago Pneumatic Tool Co., Chicago. The hammer parts are made of special steel, machined and hardened and ground. The hammer is instantly raised or lowered to the work by means of a spring controlled lever. The device weighs only 12 lbs. Two yokes, an assortment of five shaping dies and 50 ft. of air line are furnished with the equipment.

Seal-Pack Water Pump

ALUMINUM Industries, Inc., Cincinnati, Ohio, announce a new Permite product. It is a seal-pack water pump for the replacement trade. A patented Bakelite seal washer which is held in contact with the pump body by a bronze compression spring is said to be the important factor in assuring a positive seal. A chromium-plated



flange sleeve keeps the impeller properly spaced from the body of the pump, thus preventing body drag and excessive wear.

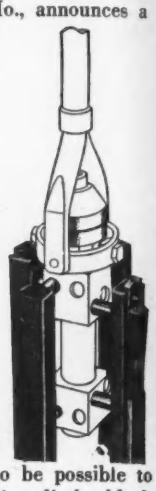
Electric Fuel Pump

STEWART-WARNER electric fuel pump for trucks and buses has been simplified and made smaller in the new model 699A. It is of the double-acting piston type, and is available in either six or 12-volt models. This pump can be installed to replace, supplement or alternate with the present fuel system, according to the Stewart-Warner Corp., Chicago.

[Other Products Page 120]

Sunnen Ridge Remover

SUNNEN PRODUCTS CO., 7900 Manchester Ave., St. Louis, Mo., announces a new ridge-removing stone. This device is used in the Sunnen cylinder grinder and is driven by an electric drill. Wooden guides are used to locate the tool in the cylinder barrel, and the stones travel down at a slight angle, eliminating the possibility of marring the cylinder walls while grinding away the ridge at the top. With only one setting required, it is said to be possible to remove the ridges from a six-cylinder block in 15 minutes. This outfit retails for $6.



"Filterite" Oil Filter

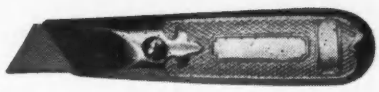
THE Rega Mfg. Co., 79 Mt. Hope Avenue, Rochester, N. Y., announces a new oil filter marketed under the name of "Filterite." It is claimed that a new principle of design is incorporated in this filter, as a valve is used to control the flow of oil through the unit, permitting a better filtering job to be done.

Filterite has a removable cartridge which

is changed by removing the one thumb screw that holds the cover in position and taking out the retaining ring with a pair of pliers. This device is sold complete with brackets, tubing and fittings ready for mounting.

Shop Knife

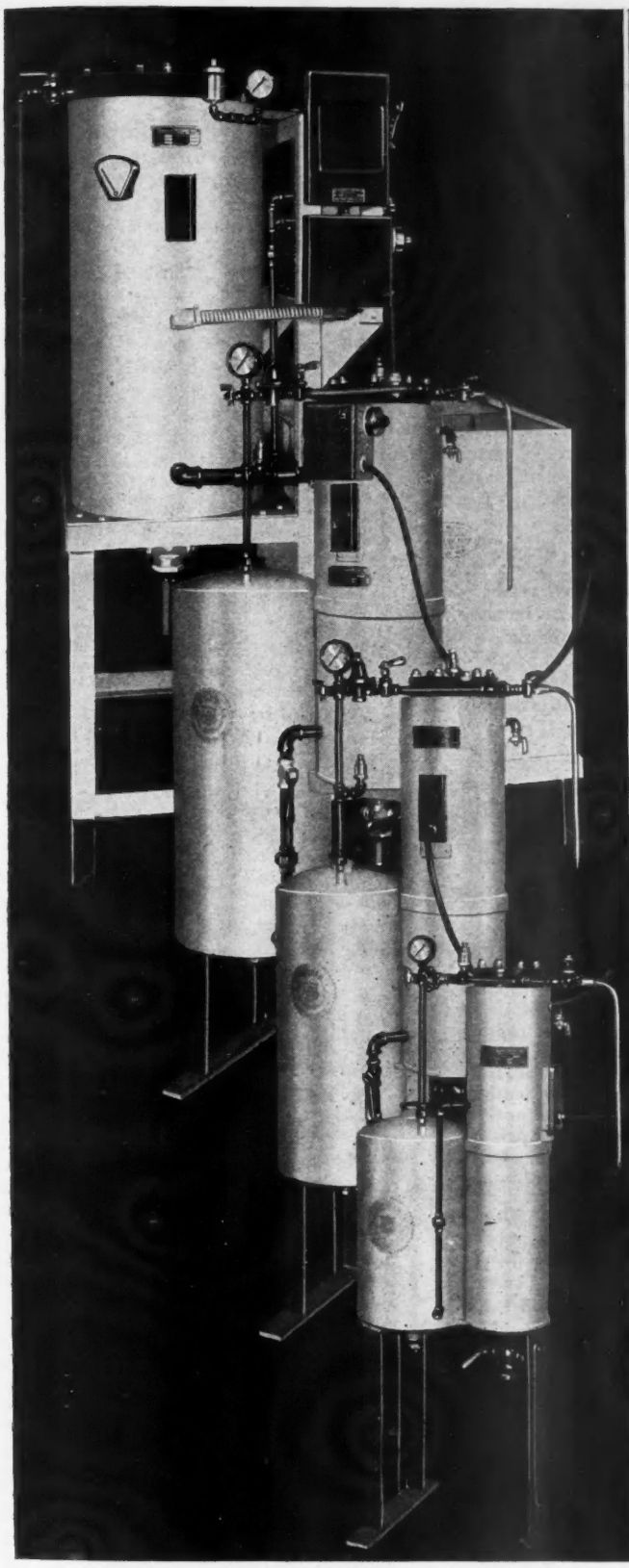
EXTRA blades are carried in the handle of the Bonney shop knife No. 199. Strong and light, this tool is intended for trimming upholstery, floor or running board

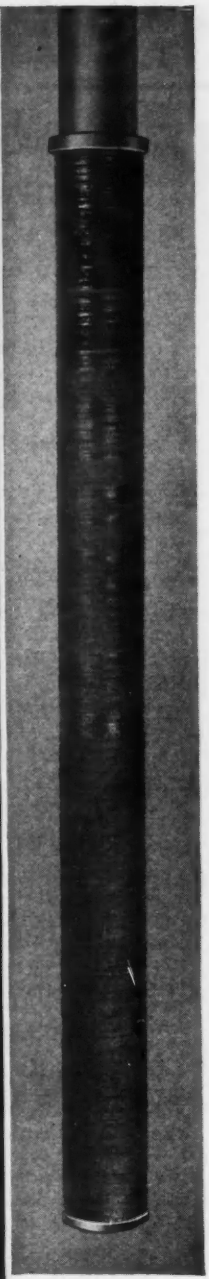


mats, top material, etc. It can also be used for cutting gaskets and for scraping old stickers from windshields. Bonney Forge & Tool Works, Allentown, Pa.

Correction

IN the January issue of COMMERCIAL CAR JOURNAL the price of Weed pliers was incorrectly given as $1.60. The correct price is $1.





Filter Pack Unit: composed of thousands of paper discs or washers about 1½" in diameter; stacked upon a central spring and rod, under 80 pounds tension, forming practically a solid column—oil forced between discs (not through them) and passes up center of pack, discharging the purified oil into clean oil tank. These Packs filter to a fineness of 1/250,000 of an inch.

Stream Line Filter

for crankcase OIL . . . . . .

The four Stream-Line Filters illustrated at the left: Models M-1, M-3, M-7 and M-19 contain the number of Filter Packs, as indicated by the model number and have normal capacities of 3, 7, 17, and 50 gallons of crankcase oil every twenty-four hours—priced from $125.00.

94 to 98% of total crank case drainage may be recovered and at an average cost of 5c per gallon. Ten to eleven millions of gallons are flowing through Stream-Line Filters annually.

Crankcase oil purified by the Stream-Line Filter is entirely free of impurities and has the same lubricating qualities as new oil in service—it is physically impossible for any contaminents to pass through with the oil.

Send amount of your new oil purchases per month and we will send you a proposal complete, showing dollars and cents savings that may be accomplished with the Stream-Line Filter.

SKINNER PURIFIERS INC., DETROIT

NEWS

GMC Establishes New Sales Set-Up

Coincident with announcement of GMC's new truck line, the company has launched an aggressive sales policy designed to expand its outlets and dealer contacts. The new set up will have five regional offices controlled by the factory and blanketing the country. Regional offices and personnel will be as follows: Eastern—E. T. Herbig; Midwest—L. L. Tremper; Central—W. A. Casey; Southern—H. J. Wasson; Pacific—H. W. Howard. Instead of distributors they will now have "key dealers."

Factory branches in New York and Newark have been discontinued and the service will be handled by independent organizations. Commercial Sales Corp. will take care of New York. General Truck Sales Corp. will handle Newark. GMT will continue a service parts branch in New York City.

F. F. Voss who has been named assistant manager of the new business department of the Federal Motor Truck Co., Detroit, Mich. Before joining Federal Mr. Voss was connected with Garford-Relay Truck Co.

Reciprocity Plan for Ill. and Ind.

Indiana and Illinois state officials have concluded a reciprocity agreement on special truck fees and taxes assessed by those states, effective immediately.

The provisions are:

1. Illinois will not assess its new weight tax, which goes into effect Jan. 1, on Indiana vehicles fully complying with Indiana law.
2. Indiana will not assess its weight tax or Public Service Commission registration fees ($12 per year per unit) on Illinois vehicles fully complying with Illinois law.
3. Illinois firms operating into Indiana will be required to have Indiana Public Service Commission certificates or permits.
4. Such Illinois firms will be required to pay the PSCI application fees ($25 for a common or contract carrier; $5 for a household mover).
5. Illinois vehicles must be registered with the Indiana Public Service Commission, but the $12-a-year fee per unit will not be charged.

Automobile Show Nov. 11

The Automobile Manufacturers Association announces Wednesday, Nov. 11, as the opening date of the next National Automobile Show at Grand Central Palace, New York, for first showing of 1937 models. The show will close on the 18th.

Year's Sales Up 27% Output Rise Is 26%

Sales for 12 Mos. Total 511,400; Production Is 756,913 Units

Truck production for 1935 exceeded production of 1934 and closed the year with an actual increase of 26.3 per cent. A total of 756,913 trucks were produced in 1935 compared with 599,397 units for 1934. December production totaled 65,596 units, an increase of 22,782 units or 53.2 per cent over the 48,814 trucks produced in 1934. December production also increased 7.3 per cent over that of November.

New truck registrations for 1935 amounted to 511,400 units, based on an estimate from 32 states for December and 11 months actual. This is an increase in truck sales of 27 per cent over the 403,886 units sold in 1934. Registrations for December are estimated at 40,000 units, an increase of approximately 16,000 units or 67 per cent over December, 1934.

Certificates of Public Convenience Applications Close Feb. 12

A warning to all motor carriers, common and contract, that they must apply by Feb. 12 next for certificates of public convenience and necessity or lose valuable rights and risk heavy fines for operating without them, has been issued by the Interstate Commerce Commission.

Attention is also directed to the fact that the law does not empower the commission to extend beyond Feb. 12, 1936, the date for filing the above-mentioned applications.

Final date for filing rates and tariffs has been postponed to April 1.

W. W. Hoagland who has been elected president of the American Auto Felt Corp., Grand Rapids, Mich. He will direct a three-fold expansion program introducing a new line of automotive accessories

Harry Levan Horning

Harry Levan Horning, founder and president of the Waukesha Motor Co., died at the Battle Creek sanatorium on Jan. 4. He was 55 years old.

Mr. Horning, in company with local business associates, organized in April, 1906, the Waukesha Motor Co., Waukesha, Mich., and became its chief engineer and general manager.

No successor will be chosen until the annual stockholders meeting next August.

Transport Groups Form Conference

In an effort to harmonize their points of view on matters of mutual interest, permanent organization of the Conference on National Transportation was effected at a meeting of representatives of the National Industrial Traffic League, The American Trucking Associations, Inc., and the Association of American Railroads, held in Washington the week of Jan. 11.

The purpose of the organization was set forth as follows: "To formulate plans by which the respective groups can cooperate to promote orderly and harmonious action in respect to rates and practices."

L. F. Orr, chairman of the highway transportation committee of the National Industrial Traffic League, was elected permanent chairman, and John V. Lawrence, general manager of the American Trucking Associations, Inc., permanent secretary. The conference will hold monthly meetings, the next being scheduled for Feb. 5.

A. K. Brumbaugh who has been appointed Pacific Coast resident engineer for Timken-Detroit Axle Co. He will handle sales, service, maintenance and engineering problems with offices in San Francisco

Silver Heads Kingham Axle Div.

H. R. Silver, formerly associated with the Shuler Axle Co., has joined the Kingham Trailer Co. as consulting engineer. The company is now manufacturing its own axles under the direction of Mr. Silver. J. C. Schuessler has joined the sales organization of the Kingham company and will travel the territory working with the distributors on sales promotion.

Alemite Has Safety Program

The Alemite division of Stewart-Warner Corp. has announced formation of a new, national organization to promote safety. The organization is known as the Alemite Brigadiers Club, the initials ABC standing for "Always Be Careful.". It is hoped to impress these simple "ABC's" of safe driving into the minds of millions of motorists.

The idea will be widely promoted through the company's regular Thursday evening broadcast over the Columbia network, and through the *Saturday Evening Post* schedule of Alemite advertisements.

Ford Production up 77%

Production of Ford cars and trucks in the United States and Canada in 1935 totalled 1,272,885 units, a gain of 557,447, or more than 77 per cent over the 715,438 units produced in 1934.

[Additional News Page 123]

I Looked at Oil Costs Wrong-End-To

"I LOOKED at oil costs from the standpoint of *First Cost*—and bought cheap oil for my fleet.

"The plan was a pip—till maintenance costs started to roll in. When they did, I figured I must be holding the sack.

"Whew! Did I do some tall investigating at once!

"I found that my motors weren't getting sufficient lubrication because of sludge and gum. I discovered carbon deposits large enough to start a charcoal factory. And I found that, besides doing the world's worst job of lubrication, the oil was going thin too fast and that I was using lots more than I should.

"Now I'm using Gulflube. Here's why I know it's plain sense to pay the few cents more:

"Gulflube is the only premium quality oil in this man's land that sells at a regular price.

"Refined by an entirely different method—the Multi-sol Process—Gulflube is refined clean of 'black-sheep' compounds. The carbon, sludge and wax-forming elements that cause expensive repairs are conspicuous by their absence.

"Gulflube's film strength is high. So is its viscosity index. It thins out less under heat, yet flows readily in winter weather.

"In mileage tests, Gulflube ran rings around every regular priced oil on the market. Recently, this mileage has been lifted up another 20 or 25%.

"Something pretty swell has got to come along before yours truly will use anything but Gulflube in his buses."

To all fleet owners Gulf says this: *We have an interesting money-saving story for you, too.* Send the coupon below—today. It will bring you a helpful chat with a Gulf Salesman.

GULFLUBE MOTOR OIL

★ GULF ★

GULF REFINING COMPANY
PITTSBURGH, PA.

CCJ-2-36

GULF REFINING COMPANY
3800 Gulf Building, Pittsburgh, Pa.

Gentlemen:
I should like to get the complete money-saving story on Gulflube. Will you please have a Gulf representative call on me

_____
(please fill in date here)

*Name*_____

*Address*_____

*City*_____ *State*_____

BLEEDING BOOSTS HEAT AND BURNS OUT TIRE LIFE

(Continued from Page 13)

When a heat blowout occurs one thing is certain—the tires are being called on to do too much work. This may be caused by many things:

1. There is not enough air in the tires to support the load. The tires flex too much.
2. Tires are too small for the job.
3. Combination of speed and load is too great for the tires.

By far the most common of these is too low air pressure.

Here is a final word of warning: Never bleed air out of tires—because if you do you are taking away from that tire the very thing it needs to keep itself from getting hot. Instead, cool the tire down to normal temperature (let it stand a while or throw cold water on it if you want it to cool quickly) and put more air into it.

By W. C. BRAY, Mgr., Truck and Bus Tire Department, The B. F. Goodrich Co.

SOME operators follow the practice of "bleeding" their tires on long runs. Reducing the pressure in this way only aggravates trouble causing greater flexing which actually increases the heat buildup and hastens failure. The only way to overcome heat and pressure buildup in a tire is to reduce speed or to install a tire of greater capacity. It must always be remembered that as the tire rotates under load each small section flexes successively and as it does the position of the cords changes with respect to each other. This causes a continuous movement in the various parts of the tire which tends to tear the cords loose from their rubber covering, either individually or in layers or plies. The amount of flexing depends upon the load and inflation pressure so that if the tire is either overloaded or underinflated, or both, the amount of movement of the cords with respect to each other is increased. Such movement creates heat within the carcass of the tire. It must travel through the rubber, a naturally poor heat conductor, to the surface to be radiated to the atmosphere.

As the speed of the vehicle is increased the number of flexures per minute rises and heat is developed more rapidly. If this heat is built up faster than it can be carried off it is stored up within the carcass of the tire until a critical point is reached when the rubber compounds begin to lose their adhesive qualities. Failure then starts and continues until the cord plies become separated which produces undue strain on each cord. They then start to break and the tire finally blows out.

The final failure may be classified as the result of one or more causes including high speed, overloads, underinflation, etc., but in the final analysis internal heat is usually the underlying reason.

The Common Causes of Tire Failure

(CONTINUED FROM PAGE 13)

blows out. In most types of service the "bruise break," as it is called, has become relatively unimportant due to the infrequency at which such failures occur.

I HAVE pointed out that a tire is primarily an envelope to retain the air. This envelope is made up of layers or plies of cotton cords anchored at each end by wire beads and running at an angle of approximately 45 deg. to the circumference of the tire. The cords in each ply lie at an angle of approximately 90 deg. to the cords in the plies immediately above or below it. Each cord is embedded in a rubber cushion.

There are, of course, many factors such as road conditions, side sway, etc., which have their effect on tire life, but the most destructive is still internal heat due to rapid and severe flexing. To overcome this some operators inflate their tires beyond the recommended pressure. If the roadway is perfectly smooth this practice may cause no harm but the strain on the cords increases as the pressure goes up. Tires are more easily injured by sharp impacts when overinflated.

Where heavy loads are carried power is required to move them and this power is transmitted through the tires. This sets up a shearing action which tends to break the cords and to separate the plies. This additional strain merely aggravates the conditions which bring about heat failures in truck or bus tires.

WHY, if heat is the primary cause of truck or bus tire failure, is it not possible to safely increase the load on a tire beyond its rated capacity on slow speed operations? The answer is that only recently have tire engineers been able to trace tire failures to their original underlying cause and thus recognize that there might be a difference between the safe load for a tire in high speed operation and one operating at slow speeds. In times past, speeds for commercial vehicles in excess of 25 to 30 miles per hour were unknown. As operating speeds have increased, tires have been improved to stand up under these more severe conditions. It is now being recognized that if a tire will give satisfactory service under certain conditions of load and inflation at high speed it will also give satisfactory service at a greatly reduced speed when the load is increased or the pressure decreased.

THE requirements for satisfactory tire performance have undergone a marked change in the past few years due to improved truck and bus designs and new services which these improved vehicles can perform. Doubtless these conditions will lead to other departures from what we have always looked upon as fixed requirements so far as loads and air pressure combinations are concerned. From the manufacturer's point of view such changes must be made slowly to avoid confusion in setting up capacity rating schedules. Failure to do this would only result in loss to both manufacturer and user as a result of improper recommendations being made or of recommendations being only partially understood and improperly followed by users.

That there are definite limits beyond which we cannot go at present has been definitely established by laboratory and road tests. Such limits are largely measured in terms of internal tire heat which is affected by such variables as load, inflation pressure, speed, atmospheric temperature, etc. All these factors vary from day to day and from one operation to another. The problem which confronts the tire engineer is one of translating his knowledge of the causes of tire failures into intelligent, fool-proof schedules of tire ratings. Probably one of the most important contributions toward further tire economy will be made by the manufacturer who develops a practical guide for operators to follow in obtaining the maximum service for their tire dollars.

COMMERCIAL CAR JOURNAL'S TRUCK SPECIFICATIONS TABLE

The Specifications Table is brought up to date in each issue from data supplied monthly by truck manufacturers

KEY TO ABBREVIATIONS AND REFERENCE MARKS

GENERAL

Make and Model—Only basic models are listed. Variations are available with most manufacturers.

Tonnage Rating—Where a spread of ratings is given the maximum ratings are for ideal operating conditions and the minimum for extremely difficult conditions; the ranges between are for varying operating conditions.

Chassis Price—Chassis price quoted applies to standard wheelbase with standard tires. All prices are F.O.B. factory.

(***)Prices ready next issue.

Gross Vehicle Weight—Is chassis weight stripped, plus body and cab weight, plus payload. Gross vehicle weight is based on maximum recommended tire size, not on tires listed as standard.

Chassis Weight Stripped—Is weight of standard chassis with standard equipment, with crankcase and cooling system full, and 5 gal. of gasoline in tank. Does not include weight of cab. Exceptions are noted.

Maximum Tire Size—Is furnished at extra cost, if the maximum differs from the standard tire size. Dual rears are understood except where otherwise noted.

Maximum Brake H.P. at Given R.P.M.—Is actual dynamometer reading without accessories.

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

Tractors—Unless given the designation N (meaning not available as tractor), all standard models may be assumed to be available as tractors.

(D)—Diesel equipped.
(N)—Not available as tractor.
(T)—Specifically designed for tractor use only.
c.o.e.—Cab-over-engine design.
e.b.s.—Engine-between-seat design
e.u.s.—Engine-under-seat design.

(2) **General Motors**—Tire size indicated in column "Max. Tire Size Furnished" is maximum capacity dual tires recommended for normal operating conditions. Model T-16L, ¾-1 ton, same as T-16 except light riding springs and 4.57 to 1 gear ratio. Models T-16H to T-61H inclusive are also available for export only as coach chassis. Dual performance rear axles at extra cost for Models T-16, T-16H, T-18, T-18H, T-23, T-23H, T-33, T-33H and T-46. Double reduction rear axle at extra cost for Models T-46, T-73H and T-74. GMC "400" engine group option at extra cost for Model T-46. GMC "331" engine group option at price deduction for Model T-61. GMC "450" engine at extra cost for Models T-61 and T-61H. GMC "400" engine at price deduction for Model T-78. Chassis prices and weights on all cab-over-engine models include the cab. A complete line of super-heavy duty models designated as T-85 series (4-wheel) and T-95 series (6-wheel) custom-built to exactly meet customer's requirements are available with a range of axles, wheelbases, engines, transmissions, etc., and prices will be quoted upon application.

(3) **International Harvester**—Model C-10, ¾-ton, same as C-20 except less spring leaves.

(4) **Reo**—2J, 2K same as 2H except 166 in. wheelbase and price of $1695. 3J same as 3H except wheelbase of 170 in. and price of $2085; 3K same as 3H except 185 in. wheelbase and price of $2155. 3M same as 3H except 205 in. wheelbase.

(5) **Stewart**—46H and 47H available with two-speed rear axle.

(6) **White**—Each model shown is furnished with different specifications for different tonnage ratings. (*)—Factory governed speed 2400 r.p.m.

(6a) White—Special prices for each installation.

(*) White—Tractor rating only.

(7) **Autocar**—Larger service brake areas on rear axles are provided when tires of 24" base are supplied.

(a) Price does not include auxiliary axle. Chassis weight includes auxiliary axle complete; area of brake lining and drum area do not include auxiliary rear axle.

(d) Models intended for dump or tractor service only.

(8) **Le Moon**—Models 306, 406, 506 and 610 are available as cab-over-engine models.

(9) **Willys**—Price includes body and complete equipment, and is complete price at Toledo.

(10) **Walker**—Frame lengths may be changed, within limits, to suit individual requirements, at no additional cost.

(11) **Biederman**—Will furnish Continental, Hercules, Waukesha and Lycoming engines at the buyer's option.

(12) **Hendrickson**—All models available in cab-over-engine design for slight additional charge.

(a) **Mack**—Chassis weight includes cab.

(b) **Sterling**—Available with Diesel engine.

(c) **Sterling**—Available with Hesselman engine.

MAKES—ALL

A LaF—American La France.
B—Bendix.
BL—Brown-Lipe.
BO—Bendix front, Own rear.
Bu or Bud—Buda.
BW—Borg Warner
BWs—Bendix front, Westinghouse rear.
C or Col—Columbia.
Cl or Cla—Clark.
Co—Covert
Con—Continental.
Cot—Cotta Gear.
Cum—Cummins-Diesel
DG—Detroit Gear and Machine.
Eat—Eaton.
Fu—Fuller.
Her—Hercules.
L—Lockheed.
Li—Lipe, W. C.
LO—Lockheed front, Own rear
LW—Lockheed front, Wisconsin rear.
Lyc—Lycoming.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Ste or St—Sterling.
T or Tim—Timken.
TW—Timken-Wisconsin
TWH—Timken Wisconsin Herrington
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Ws—Westinghouse.

BRAKES—SERVICE

Location

2—Two Wheels, rear only.
2/4—Two-wheel brakes effective on all four wheels through driveshaft.
4/6—Brakes on four rear wheels effective on all wheels through driveshaft.
T/4—Brake on transmission effective on all four wheels through driveshaft.
4—Four Wheels, front and rear.
4r—Four Wheels, rear only.
6—Six Wheels, front and rear.
J—Jackshaft.
P—Propeller shaft.

Type

I—Internal.
X—External.

Operation

A—Air.
D—Hydraulic and mechanical.
H—Hydraulic.
M—Mechanical.
V—Vacuum.

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
R—Worm or bevel gearshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
X—External.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Fdry.
C—Centrifuse.
D—Dayton.
E—Ermalite.
G—Gunite.
H—Hunt Spiller.
c—Cast iron.
p—Pressed steel.
P—Pressed steel.
s—Cast steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

I—"I" Beam.
C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center.
Tf—Tapered front.
X—x-Braced.

GOVERNOR STANDARD

Y—Yes.
N—No.

REAR AXLE

Final Drive and Type

B—Bevel.
C—Chain.
D—Dead.
F—Full-floating.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
w/2—Worm or Double Reduction Optional.
½—Semi-floating.
¾—Three-quarter floating.
(*) Ratios other than standard at extra cost.
(**) Only one ratio.

Drive and Torque

A—Radius Rods and Torque Arm.
B—Radius Rod and Torque Tube
H—Hotchkiss. (springs)
R—Radius Rods
T—Torque Arm.
U—Torque Tube.

WHEELS DRIVEN

2C—Center pair of rear wheels.
2R—Rear pair of rear wheels.
4F—Front and center pair of rear wheels.
4R—Four rear wheels.
6—Six wheels.

FORMULAS

(For Transportation Engineering)

Miles Per Hour

$$M.P.H. = \frac{R.P.M. \times D.}{336 \times F.G.R.}$$

M.P.H.=Miles per hour.
R.P.M.=Revolutions per minute.
D.=Effective tire diameter.
F.G.R.=Final gear ratio.

Grade Ability

GA=TE—RR.
GA=Grade ability.
TE=Tractive effort.
RR=Road resistance—.012 for hard surfaced roads.

Tractive Effor

$$TE = \frac{\text{in. lb. torque} \times F.G.R. \times EFF.}{G.V.W. \times R.}$$

EFF.=Efficiency—.90 for all rear axles except worm, then .85.
R.=Rolling radius.
G.V.W.=Gross vehicle weight.
in. lb. torque=12 x torque in lb. ft.

Torque in LB. FT.

Torque=.65 x cu. in. displacement. (This is approximate and should be used only when actual torque is not known.)

Cu. In. Displacement

D=B x B x .7854 x S x No. of Cyl.

AMA Horsepower Rating

$$AMA\ H.P. = \frac{B \times B \times No.\ of\ Cyl.}{2.5}$$

D=Cu. in. displacement.
B=Cylinder bore.
S=Cylinder stroke.

TIRE TABLE

(Tire and Rim Association, Inc.)

Balloon Tires

Size	Capacity (lb.)	Size	Capacity (lb.)
5.50/20	1225	9.75/15	3175
6.00/20	1400	9.75/18	3600
6.50/18	1550	9.75/20	3900
6.50/20	1700	9.75/22	4200
7.00/18	1800	9.75/24	4400
7.00/20	1950	10.50/20	4700
7.50/18	2025	10.50/22	5000
7.50/20	2200	10.50/24	5200
7.50/24	2500	11.25/20	5450
8.25/18	2450	11.25/22	5800
8.25/20	2650	11.25/24	6050
8.25/22	2850	12.00/20	6250
8.25/24	3025	12.00/24	6950
9.00/15	2650	12.75/20	7200
9.00/18	3000	12.75/24	8000
9.00/20	3250	13.50/20	8200
9.00/22	3500	13.50/24	9100
9.00/24	3650		

High Pressure Tires

30x5	1700	34x7	2800
34x5	1950	38x7	3200
32x6	1950	36x8	3600
(8-ply)		40x8	4000
32x6	2200	38x9	4500
(10-ply)		42x9	5000
36x6	2500	40x10	5500
32x7	2550	44x10	6000

Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Spd's	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE Make	Location	Type	Operat'n	Lining Area	Drum Area	Drum Material	Hand Location	Type	C-A Dimension (Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Armleder.....11H	1½-2½	1295	156	195	11500	4850	6.50/20D	7.00/20	Con 20C	6-3½x4½	248	5.0	150	76-2800	7-2½x10	N	BL-35	4	Tim	BF	H	6.6-5.14	Tim	L4IH	254	380	G	TX	Opt	6x3x¼	P
2	.....21Ha	2½-4	2185	160	207	15300	5450	8.25/20D	8.25/20	Her WXC	6-4x4½	339	4.7	225	78-2400	7-2½x13¼	Y	Fu 5-A-38	5	Tim	BF	R	7.4-5.71	Tim	L4IHV	312	527	G	TX	Opt	6x3x¼	P
3	.....31Ha	3-4½	2695	146	213	19500	5750	9.00/20D	9.00/20	Her WXC	6-4x4½	339	4.7	225	78-2400	7-2½x13¼	Y	Fu 5-A-38	5	Tim	BF	R	7.8-6.14	Shu	L4IHV	342	578	G	TX	Opt	7x3x¼	P
4	.....41Ha	4½-6	3050	146	227	23000	6600	9.75/20D	9.75/20	Her WXC	6-4x4½	339	4.7	225	78-2400	7-2½x13¼	Y	Fu 5-A-38	5	Tim	BF	R	7.8-6.14	Shu	L4IHV	402	659	G	TX	Opt	7x3x¼	P
5	.....61Ha	5-7	3725	146	227	24000	7400	9.75/20D	9.75/20	Her WXC2	6-4½x4½	360	4.7	238	85-2400	7-3x15	Y	Fu 5-A-38	5	Own	2F	R	8.94-7.14	Shu	L4IHV	507	768	H	TX	Opt	8½x3x¼	P
6	.....(T) TRD	10	4150	148	174	35000	7100	9.00/20D	9.00/20	Her YXC	6-4½x4½	428	4.4	280	93-2200	7-3x15	Y	Fu 5-A-53	5	Own	2F	R	8.94-7.14	Shu	L4IHV	507	768	H	TD	Opt	7x3x¼	P
7	.....(T) TRDA	12	4350	148	174	39000	7226	9.75/20D	9.75/20	Her YXC3	6-4½x4½	478	4.4	318	103-2200	7-3x15	Y	Fu 5-A-53	5	Own	2F	R	8.94-7.14	Shu	L4IHV	507	768	H	TD	Opt	7x3x¼	P
8	.....(T) TRDB	15	4595	148	174	45000	7326	9.75/20D	9.75/20	Her RXC	6-4½x5¼	529	4.4	355	115-2200	7-3x15	Y	Fu 5-A-53	5	Wis	2F	R	8.94-7.14	Shu	L4IHV	507	780	H	TD	Opt	7x3x¼	P
9	Autocar (N) RH	2½-6½	3250	174	192	.....	6893	8.25/20D	9.75/20	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DF	2F	H	6.49-7.88	Tim 33000	LO4IDV	440	693	c	2I	84½	8x3x¼	T
10	...(7) (T) RHT	6-9	3250	150	174	.....	6746	8.25/20D	9.00/22	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DF	2F	H	7.13-7.88	Tim 33000	LO4IDV	440	693	c	2I	60½	8x3x¼	T
11	.....(d) RHD	3-4	3250	150	160	.....	6619	8.25/20D	9.00/20	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DF	2F	H	6.49-7.88	Tim 33000	LO4IDV	440	693	c	2I	84½	8x3x¼	T
12	.....(N) D	2½-6½	3550	174	192	.....	7055	8.25/20D	9.75/20	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DF	2F	H	6.49-7.88	Tim 33000	LO4IDV	440	693	c	2I	60½	8x3x¼	T
13	.....(T) DT	6-9	3550	150	174	.....	6849	8.25/20D	9.00/22	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DFA	2F	H	6.49-7.88	Tim 35000	LO4IDV	519	832	c	2I	84½	8x3x¼	T
14	.....(N) DF	4-8½	3875	159	177	.....	7719	9.00/20D	10.50/20	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DFA	2F	H	6.49-7.88	Tim 35000	LO4IDV	519	832	c	2I	60½	8x3x¼	T
15	.....(T) DFT	7½-12	3875	135	159	.....	7728	9.00/20D	9.75/22	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DFA	2F	H	7.13-7.88	Tim 33000	LO4IDV	519	832	c	2I	60½	8x3x¼	T
16	.....(d) DP	3½-4	3725	150	160	.....	6891	8.25/20D	9.00/20	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own N	2F	H	7.20-10.4	Tim 35000	LO4IDV	519	832	c	2I	70½	8x3x¼	T
17	.....(d) DH	4-5½	4050	145	159	.....	7804	9.00/20D	9.75/20	Own 404	6-4¼x4¼	404	5.5	295	97-2200	7-3x14½	Y	Own DF5	5	Own N	2F	H	4.67-10.4	Tim 35000	LO4IDV	543	931	c	FD	102½	9x3x¼	T
18	.....(N) N	5½-8	4650	178	213	.....	8731	9.75/20D	10.50/24	Own 404	6-4¼x4¼	404	5.5	295	97-2200	7-3x14½	Y	Own DF5	5	Own C	2F	H	5.18-10.4	Tim 35000	LO4IDV	519	832	c	FD	61½	8x3x¼	T
19	.....(T) NT	7-11	4575	137	158	.....	8639	9.75/22D	9.75/22	Own 404	6-4¼x4¼	404	5.5	295	97-2200	7-3x14½	Y	Own DF5	5	Own TF	2F	H	4.41-10.4	Tim 35000	LO4IDV	543	931	c	FD	102½	9x3x¼	T
20	.....(N) NF	6-9	4900	178	213	.....	9190	9.75/22D	10.50/24	Own 404	6-4¼x4¼	404	5.5	295	97-2200	7-3x14½	Y	Own DF4	4	Own TF	2F	H	6.12-10.4	Tim 26450	LO4IMV	580	931	c	FD	119½	9x3x¼	T
21	.....(N) NFS	7½	5600	208	208	.....	10000	10.50/20D	10.50/20	Own 404	6-4¼x4¼	404	5.5	295	97-2200	7-3x14½	Y	Own TF5	5	Own C	2F	H	5.40-10.4	Tim 35000	LO4IDV	519	832	c	FD	61½	8x3x¼	T
22	.....(T) NFT	7-15½	4900	137	158	.....	8905	9.00/22D	10.50/24	Own 453	6-4½x4¾	453	5.5	33	108-2200	7-3x14½	Y	Own CGA	2F	H	7.69-8.52	Tim 26450	LO4IDV	543	931	c	FD	89½	9x3x¼	T
23	.....(d) S	6-8	5850	165	165	.....	10016	9.75/22D	10.50/22	Own 453	6-4½x4¾	453	5.5	33	108-2200	7-3x14½	Y	Own C	2F	H	7.20-10.4	Own SCH	O2IMV	502	931	c	FD	88½	9x3x¼	T
24	.....(N) CE	7½	6000	172	203	.....	10300	36x7†D	36x7S*	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14½	Y	Own TF4	4	Own TG	2F	H	5.40-8.68	Tim 26450	TO4IA	543	931	c	FD	102½	9x3x¼	T
25	.....(N) T	7½-10½	5900	178	228	.....	9979	10.50/22D	11.25/24	Own 501	6-4½x5¼	501	5.5	375	123-2200	7-3¼x14¾	Y	Own TF5	5	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	700	931	c	FD	129	10½x3x¼	T
26	.....(N) TS	10	6600	204	204	.....	10823	10.50/24D	10.50/24	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3¼x14¾	Y	Own TF4	4	Own CG	2F	H	7.69-8.52	Tim 26450	TO4IA	543	931	c	FD	61½	9x3x¼	T
27	.....(T) TT	8½-15	6150	137	158	.....	9883	9.75/20D	10.50/24	Own 501	6-4½x5¼	501	5.5	375	123-2200	7-3¼x14¾	Y	Own TF4	4	79733W	2F	H	7.97-10.1	Tim 27450	LO4IDV	663	1051	c	FD	90	10½x3x¼	T
28	.....(d) C	10-14	6800	165	165	.....	11375	10.50/24D	11.25/24	Own 501	6-4½x5¼	501	5.5	375	123-2200	7-3¼x14¾	Y	BL 7351	5	Own CGA	2F	H	7.69-8.52	Tim 27450	TO4IA	659	1051	c	FD	151	10½x3x¼	T
29	.....(N) TF	15	7500	236	250	.....	12053	10.50/24D	11.25/24	Wau 6RB	6-5x5¾	677	4.7	461	125-1800	4-3½x11¾	Y	BL 7351	5	Own CGA	2F	H	7.69-8.52	Tim 27450	TO4IA	659	1051	c	FD	62	10½x3x¼	T
30	.....(T) TFT	15	7500	155	177	.....	11537	10.50/24D	11.25/24	Wau 6RB	6-5x5¾	677	4.7	461	125-1800	4-3½x11¾	Y	Own DF5	5	Own DF	2F	H	6.49-7.88	Tim 35000	LO4IDV	440	693	c	2I	84½	8x3x¼	T
31	e.u.s. (N) UD	3½-6½	3750	109	145	.....	7629	8.25/20D	9.75/20	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DF	2F	H	6.49-7.88	Tim 35000	LO4IDV	440	693	c	2I	84½	8x3x¼	T
32	e.u.s. (T) UDT	5½-8½	3750	109	109	.....	7623	8.25/20D	9.00/22	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own C	2F	H	5.65-10.4	Tim 26450	LO4IDV	543	931	c	2I	75½	8x3x¼	T
33	e.u.s. (d) UDP	4-5½	4650	100	100	.....	8525	9.00/20D	9.75/20	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DFA	2F	H	6.49-7.88	Tim 26450	LO4IDV	519	931	c	2I	84½	8x3x¼	T
34	e.u.s. (N) UDF	5-8½	4075	109	145	.....	8357	9.00/20D	10.50/20	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own C	2F	H	7.20-10.4	Tim 35000	LO4IDV	519	931	c	2I	66½	8x3x¼	T
35	e.u.s. (T) UDFT	7-11½	4250	91	109	.....	8262	9.00/20D	9.75/22	Own 358	6-4x4⅜	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own C&N	2F	H	5.18-10.4	Tim 26450	LO4IDV	543	931	c	FD	84½	8x3x¼	T
36	e.u.s. (N) UN	5½-8	4875	109	163	.....	9259	9.00/22D	10.50/20	Own 404	6-4¼x4¼	404	5.5	295	97-2200	7-3x14½	Y	Own DF5	5	Own C	2F	H	5.18-10.4	Tim 35000	LO4IDV	519	931	c	FD	71½	8x3x¼	T
37	e.u.s. (T) UNT	6½-11	4600	98	109	.....	8665	9.00/20D	9.75/22	Own 404	6-4¼x4¼	404	5.5	295	97-2200	7-3x14½	Y	Own TF5	5	Own TF	2F	H	4.41-10.4	Tim 26450	LO4IDV	543	931	c	FD	103½	9x3x¼	T
38	e.u.s. (N) UNF	6½-9	5100	128	163	.....	9731	9.75/20D	10.50/24	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14½	Y	Own TF5	5	Own C	2F	H	5.40-10.4	Tim 26450	LO4IDV	543	931	c	FD	71½	8x3x¼	T
39	e.u.s. (T) UNFT	6½-15½	5000	98	109	.....	8935	9.00/20D	10.50/24	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14½	Y	Own DF4	4	Own TF	2F	H	6.12-10.4	Tim 26452	B4IMV	637	931	c	FD	120½	9x3x¼	T
40	e.u.s. (N) UNFS	7½	5600	145	145	.....	9585	10.50/20D	10.50/20	Own 404	6-4¼x4¼	404	5.5	295	97-2200	7-3x14½	Y	Own TF5	5	Own TG	2F	H	5.40-8.68	Tim 26450	TO4IA	543	931	c	FD	103½	9x3x¼	T
41	e.u.s. (N) UT	7½-10½	6000	128	163	.....	10494	9.75/24D	10.50/24	Own 501	6-4½x5¼	501	5.5	375	123-2200	7-3¼x14¾	Y	Own TF4	4	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	700	931	c	FD	120½	10½x3x¼	T
42	e.u.s. (N) UTS	10	6600	145	145	.....	10927	10.50/24D	10.50/24	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3¼x14¾	Y	Own TF5	5	Own CG	2F	H	7.69-8.52	Tim 26450	TO4IA	543	931	c	FD	84½	9x3x¼	T
43	e.u.s. (T) UTT	6-15	6100	109	109	.....	10031	9.00/20D	10.50/24	Own 501	6-4½x5¼	501	5.5	375	123-2200	7-3¼x14¾	Y	Fu F5	5	Own CGA	2F	H	7.69-8.52	Tim 26450	LO4IDV	543	931	c	FD	95½	9x3x¼	T
44	e.u.s. (d) US	6-8½	5700	120	120	.....	10018	9.75/22D	10.50/22	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3¼x14¾	Y																		
45	Available...W120	1½	1370	Op	Op	12500	4000	6.50/20D	7.50/20	Wau BL	6-3½x4¼	245	5.4	165	73-3000	7-2½x10¼	N	WG T9	4	Tim 53300	SF	H	** 6.6	Tim 30000H	L4IH	269	376	a	TX	Opt	10x2½x¼	TX
46	.....W-170	2½	1780	Op	Op	14000	4800	7.50/20D	8.25/20	Wau BL	6-3½x4¼	245	5.4	165	73-3000	7-2½x10¼	N	WG T9	4	Tim 54412	SF	R	** 6.8	Tim 31000H	L4IH	330	582	a	TX	Opt	10x2½x¼	TX
47	.....W-210	2½	1890	Op	Op	14000	4850	7.50/20D	8.25/20	Wau BK	6-3¾x4¼	282	5.4	188	85-3200	7-2½x10¼	Y	Fu 5-A-290	5	Tim 54412	SF	R	** 6.8	Tim 31000H	L4IH	330	582	a	TX	Opt	10x2½x¼	TX
† 48	.....W240	3-3½	2175	Op	Op	19000	5500	8.25/20D	9.00/20	Wau BK	6-3¾x4¼	282	5.4	188	85-3200	7-2½x10¼	Y	Fu 5-A-290	5	Tim 56410	SF	R	** 7.4	Tim 32502H	L4IH	330	582	a	TX	Opt	12x2½x¼	TX
49	.....W300	4	3025	Op	Op	21700	7000	9.00/20D	9.75/20	Wau 6-110	6-4x4¼	358	5.1	254	110-2800	7-2½x12½	Y	Fu 5-A-380	5	Tim 58205	SF	R	** 7.8	Tim 35000H	L4IH	376	660	a	TD	Opt	12x2½x¼	TX
50	.....W400	5	4125	Op	Op	26500	8200	9.75/20D	9.75/20	Wau 6-125	6-4½x5½	462	5.0	324	125-2600	7-3x13¾	Y	Fu 5-A-530	5	Tim 65725H	WF	R	** 10.25	Tim 35000H	L4IHV	462	768	a	TD	Opt	14x3x¼	TX
51	Biederman (11)..10	1	1095	145	157	10000	3100	7.00/20S	8.25/20S	Con 25A	6-3½x4	215	4.9	142	70-2800	4-2¼x6¼	Y	War T9	4	Cla B373	BF	R	5.1-6.4	Cla F212	L4IH	312	424	G	TX	54	7x3x¼	T
52	20	1½	1295	157	180	11400	3800	7.00/20D	8.25/20	Wau 6BL	6-3½x4¼	245	5.2	162	75-2800	7-2½x10¼	Y	War T9	4	Cla B373	BF	R	5.1-6.4	Cla F212	L4IH	312	424	G	TX	82	7x3x¼	T
53	30	2	1560	166	190	14000	4800	7.50/20D	9.00/20	Wau 6BL	6-3½x4¼	245	5.2	162	75-2800	7-2½x10¼	Y	Fu 5-A-29	5	Cla B373	BF	R	5.6-6.4	Cla F308	L4IH	458	556	G	TX	82	7½x3x¼	T
54	40	2½	1750	180	200	15000	5500	8.25/20D	9.00/20	Wau 6BK	6-3¾x4¼	282	5.0	190	84-2800	7-2½x10¼	Y	Fu 5-A-29	5	Cla B613	BF	R	5.6-6.4	Cla F308	L4IH	458	556	G	TX	105	7½x3x¼	T
55	50	3	2205	180	200	16000	6800	8.25/20D	9.00/20	Con E501	6-4¼x4¼	318	4.6	205	88-2600	7-2½x12††	Y	Fu 5-A-38	5	Cla B805	BF	R	6.4-7.2	Cla F308	L4IH	458	556	G	TX	105	8x3x¼	T
56	60	3½	2750	180	210	20000	7100	9.00/20D	10.50/20	Con E502	6-4¼x4¼	360	4.5	240	92-2600	7-2½x12††	Y	Fu 5-A-38	5	Cla B805	BF	R	5.7-7.2	Cla F318	L4IH	490	660	G	PX	105	8x3x¼	T
57	70	5	3600	157	210	24000	7530	9.75/20D	10.50/20	HerWXC3	6-4¾x4½	361	4.7	265	98-2500	7-2½x12††		Fu 5-A-38	5	Wis 1237	2F	R	7.0-9.4	Tim 35100	Ws4IA	616	836	G	PX	76	9x3x¼	T
58	80	7½	4200	187	210	30000	8500	10.50/20D	12.00/22	Her RXB	6-4½x5¼	500	4.9	330	110-2200	7-3x12¾		Fu 5-A-53	5	Wis 1737	2F	R	6.0-9.2	Tim 26450	Ws4IA	616	836	G	PX	103	10x3x¼	T
59	Brockway.....78	1½-2	895	138	164	.....	3965	6.00/20D	32x6	Con 24B	6-3½x4½	210	5.7	154	71-3100	4-2¼x6	N	WG T9	4	Tim 53521H	SF	H	5.66-6.6	Tim 30000H	L4IH	248	380	a	TX	65	7††x3x¼	T
60	87	2-2½	1240	144	176	.....	4435	6.50/20D	7.50/20	Con 28B	6-3½x4½	248	5.7	170	78-3100	7-2½x10¼	N	WG T9	4	Tim 53521H	SF	H	5.66-6.6	Tim 30000H	L4IHV	248	380	a	TX	71	7††x3x¼	T
61	88	2-2½	***	144	176	.....	4500	6.50/20D	7.50/20	Con 25B	6-3½x4½	244	5.7	171	84-3250	4-2½x6⅝	Y	Fu 5-A-29	5	Tim 53307H	SF	H	6.2-6.8	Tim 30000H	L4IHV	300	456	a	TX	71	7††x3x¼	T
† 62	.....90X	2½-3	1470	150	176	.....	4635	7.00/20D	34x7	Con 28B	6-3½x4½	248	5.3	170	78-3100	7-2½x10¼	N	WG T9	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	365	578	a	CD	83	8x3x¼	T
† 63	92	3	***	156	188	.....	4700	7.00/20D	8.25/20	Con 25B	6-3½x4½	244	5.7	171	84-3250	4-2½x6⅝	N	BL B341	4	Tim 56410H	SF	H	6.16-7.4	Tim 31000H	L4IHV	365	578	a	CD	83	8x3x¼	T
† 64	94	3-4	***	156	188	.....	5050	7.50/20D	8.25/20	Con 25B	6-3½x4½	244	5.7	171	84-3250	4-2½x6⅝	N	BL B341	4	Tim 53307H	SF	H	5.83-6.8	Tim 31000H	L4IHV	336	528	a	CD	83	7††x3x¼	T
65	96	2½-3	1740	156	176	.....	5150	7.00/20D	8.25/20	Con 29B	6-3††x4½	288	5.4	192	78-2650	7-2½x13	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	365	578	a	CD	83	8x3x¼	T
66	110	3	1900	156	188	.....	5490	7.50/20D	8.25/20	Con 29B	6-3††x4½	288	5.4	192	78-2650	7-2½x13	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	365	578	a	CD	91	8x3x¼	T
67	.....125X	3	2075	164	188	.....	5570	7.50/20D	8.25/20	Con 31B	6-3¾x4½	318	5.5	214	86-2600	7-2½x13	N	BL B341	4	Tim 56410H	SF	R	6.16-7.4	Tim 32505H	L4IHV	365	578	a	CD	91	8x3x¼	T
68	130	3-4	2245	164	206	.....	6270	8.25/20D	9.00/20	Con 29B	6-3††x4½	288	5.4	192	78-2650	7-2½x13	N	BL B341	4	Tim 56410H	SF	R	6.16-7.4	Tim 32505H	L4IHV	365	578	a	CD	103	8x3x¼	T
69	145	3-4	2385	176	206	.....	6390	8.25/20D	9.00/20	Con 31B	6-3¾x4½	318	5.5	214	86-2600	7-2½x13	Y	BL 3241	4	Tim 56410H	SF	R	5.71-7.4	Tim 32505H	L4IHV	365	578	a	CD	103	8x3x¼	T
70	.....150X-4	3½-4	2680	176	206	.....	6520	8.25/20D	9.00/20	Con 32B	6-4¼x4½	361	5.4	252	95-2500	7-2½x13	Y	Fu 5-A-38	5	Tim 56410H	SF	R	5.71-7.4	Tim 32505H	L4IHV	365	578	a	CD	103	8x3x¼	T
71	.....150X-5	3½-4	2710	176	206	.....	6570	8.25/20D	9.00/20	Con 32B	6-4¼x4½	361	5.4	252	95-2500	7-2½x13	N	BL 314	4	Tim 54300H	SF	H	4.86-5.83	Tim 32505H	L4IH	365	578	a	CD	69	8x3x¼	T
72	120	2½-3	2260	156	188	.....	5800	7.50/20D	8.25/20	Con 30B	6-4x4½	311	4.2	203	85-2500	7-2¾x13	Y	BL 314	4	Wis 5000L	2F	R	6.00-7.35	Tim 32505H	L4IHV	365	578	a	CD	69	8x3x¼	T
73	140	3-3½	2850	156	200	.....	6385	8.25/20D	9.00/20	Con 30B	6-4x4½	311	4.2	203	85-2500	7-2¾x13	Y	Wis 72000	2F	R	6.28-8.00	Shu 15685B1	L4IHV	407	663	a	CD	83	8x3x¼	T
† 74	141	3½-4	3355	170	200	.....	7450	9.00/20D	9.75/22	Con 30B	6-4x4½	311	4.2	203	85-2500	7-2¾x13	N	BL 314	4	Wis 5000L	2F	R	6.00-7.35	Tim 32505H	L4IHV	365	578	a	CD	91	8x3x¼	T
75	.....130-PS	4-4½	2525	164	206	.....	6250	34x7D	9.00/20	Con 29-B	6-3††x4½	288	5.4	192	78-2650	7-2½x13	N	Fu5-A-38	5	Tim 56200H	SF	R	6.16-7.4	Tim 32505H	L4IHV	365	578	a	CD	91	8x3x¼	T
76	.....160X	4-5	3295	153	219	.....	7350	9.00/20D	9.75/22	Con 32B	6-4¼x4½	361	5.4	252	95-2500	7-2½x13	Y	Fu 5-A-38	5	Tim 58205H	SF	R	6.14-7.8	Shu 15685B1	L4IHV	407	663	a	CD	83	8¼x3x¾	T
77	.....170X	4-5	3640	153	219	.....	7960	9.00/20D	9.75/22	Con 33B	6-4¼x4¾	381	4.4	276	106-2600	7-2¾x13	Y	Fu 5A53	5	Wis 72000L	2F	R	5.00-8.40	Shu 15685B1	L4IHV	407	663	a	CD	83	8¼x3x¾	T
78	.....165X	5-7	3795	153	219	.....	8150	9.75/20D	10.50/22	Con 32B	6-4¼x4¼	361	5.4	252	95-2500	7-2¾x13	Y	Fu 5A38	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15685B1	L4IHV	500	772	a	CD	83	8¼x3x¾	T
79	.....175X	5-7½	4290	153	219	.....	8550	9.00/20D	10.50/22	Con 34B	6-4¾x4¾	427	4.2	308	118-2600	7-2¾x13	Y	Fu 5A53	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15685B1	L4IHV	500	772	a	CD	83	8¼x3x¾	T
80	.....195X	5-7½	4230	153	219	.....	8650	9.75/20D	10.50/22	Con 33B	6-4¼x4¾	381	4.4	276	106-2600	7-2¾x13	Y	Fu 5A53	5	Wis 1737KH	2F	R	5.75-8.05	Shu 15685B1	L4IHV	550	899	a	CD	83	8¼x3x¾	T
81	.....220X	7½-10	4930	153	219	.....	9050	10.50/20D	11.25/24	Con 34B	6-4¼x4¾	427	4.2	308	118-2600	7-2¾x13	Y	Fu 5A53	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15685B1	L4IHV	500	772	a	CD	83	8¼x3x¾	T
82	.....240X	6-7½	5130	153	219	.....	8590	9.75/20D	10.50/24	Con 35B	6-4½x5¼	501	4.3	364	135-2200	7-2¾x13	Y	Fu MHU	4	Wis 1737KH	2F	R	5.75-9.15	Shu 15695B1	Lw4IDV	600	899	a	CD	125	8¼x3x¾	T
83	.....260X	10	6030	195	219	.....	9720	10.50/22D	11.25/24	Con 35B	6-4½x5¼	501	4.3	364	135-2200	7-2¾x13	Y	Fu MHU	4	Wis 1737KH	2F	R	5.75-9.15	Shu 15695B1	Lw4IDV	600	899	a	CD	125	8¼x3x¾	T
84	.....260S	10	6380	195	219	.....	10000	10.50/24D	11.25/24	A LaF V12	12-425	753	5.1	505	240-2800	4-3½x9¼	Y	BL 7351	5	Wis 1910W	2F	R	7.16-10.0	Tim 27452 A1	Ws4IA	558	867	a	CD	68	10x3x

| | | |

Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Spd's	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Federal . . C7-C7W	6-7½	4710	195	249	29000	9550	9.75/20D	10.50/24	Wau 6SRK	6-4½x5½	517	4.6	330	110-2200	7-3x13½	Y	Cla B 710	5	Tim 76736H	w/2f	R	7.35–10.2	Tim 36020H	L4IHV	512	. . . .	a	TD	102	7½x3½x¼	P
2	(Concl'd)C8-C8W	6-7½	5120	195	249	29000	9650	9.75/20D	10.50/24	Wau 6SRK	6-4½x5½	517	4.6	330	110-2200	7-3x13½	Y	Cla B 710	5	Tim 76736W	w/2f	R	7.35–10.2	Tim 36020W	Ws41A	609	. . . .	a	TD	102	7½x3½x¼	PCC
3	. . . . .X8DR-X8	7½	4335	162	186	30000	9750	36x6‡8	10.50/24	Con B7	4-5x6	471	3.7	288	61-1350	3-2½x10¾	Y	Cla B 710	5	Tim 68700DP	w/2f	R	8.9–11.14	Own 5008	T2IMV	568	. . . .	a	RI	87	9½x3½x¼	
4	. . .X8RDR-X8R	7½	4735	162	186	30000	10475	40x8D	10.50/24	Wau 6SRK	6-4½x5½	517	4.6	330	110-2200	7-3x13½	Y	Cla B 710	5	Tim 68702DP	w/2f	R	8.9–11.14	Own 5008	T2IMV	458	. . . .	a	RI	87	9½x3½x¼	
5	Ford. 51	1½	500	131	131	. . . . .	3220	6.00/20†8	32x7	Own	8-3 1/8 x3¾	221	5.3	138	80-3800	3-2x5½	N	Own	FS	U	5.14–6.6	Own	O4IM	350	489	a	2I	57¾	7x2¾x ½	C
6	 51	1½	525	157	157	. . . . .	3297	6.00/20†8	32x7	Own	8-3 1/8 x3¾	221	5.3	138	80-3800	3-2x5⅝	N	Own	FS	U	5.14–6.6	Own	O4IM	350	489	a	2I	83¼	7x2¾x ½	
7	. . . . .Commercial		360	112	112	. . . . .	1966	6.00/16S	6.50/16	Own	8-3 1/8 x3¾	221	5.3	138	80-3800	3-2x5⅝	N	Own	3	Own	8¾	U	3.54–4.11	Own	O4IM	186	293	a	4I	38¼	5½x2x.11	
8	Gen. Mot.(N) T-14	¼	425	126	126	. . . . .	2300	6.00/16S	. . . . .	Own 213	6-3 1/8 x4½	213	6.0	152	84-3500	4-2‡‡ rx6‡‡	N	Own	3	Own	S½	U	** 4.11	Own	O4IH	168	242	C	2I	46½	5‡‡ x2¼x ⅜	C
9	. . . . . T-16	1½–3	525	131	157	. . . . .	3250	6.00/20†8	7.50/20	Own 213	6-3 1/8 x4½	213	6.0	152	84-3500	4-2‡‡ rx6‡‡	N	Own	4	Own	SF	H	5.67–6.20	Own	O4IH	337	478	C	2I	51½	7x2¾x ½	T
10	. . . . . T-16H	1½–3½	645	139	181	. . . . .	3550	6.00/20†8	7.50/20	Own 213	6-3 1/8 x4½	213	6.0	152	84-3500	4-2‡‡ rx6‡‡	N	Own	4	Own	SF	H	5.67–6.60	Own	O4IH	337	478	C	2I	60	7 x2¾x¼	T
11	. . . . . T-18	1½–4	815	136	178	. . . . .	3930	30x5†8	7.50/20	Own 239	6-3 1/8 x4½	238	5.1	170	81-3000	4-2¾x7‡‡	Y	Own	4	Own	SF	H	5.67–6.60	Own	L4IH	311	482	C	TX	60	7½x3x ⅜	T
12	. . . . . T-18H	1½–4½	895	136	178	. . . . .	4170	6.50/20D	34x7	Own 239	6-3 1/8 x4½	238	5.1	170	81-3000	4-2¾x7‡‡	Y	Own	4	Own	SF	H	5.83–6.80	Own	L4IH	342	533	C	TX	60	7½x3x ⅜	T
13	. . . . . T-23	2–4½	1285	136	196	. . . . .	4400	7.00/20D	34x7	Own 257	6-3 1/8 x4½	257	5.0	190	88-2800	4-2¾x7‡‡	Y	Own	4	Own	SF	H	5.63–7.20	Own	L4IHV	386	612	C	TX	60	8x3x¼	T
14	. . . . . T-23H	2–5	1515	136	196	. . . . .	4750	7.50/20D	9.00/20	Own 257	6-3 1/8 x4½	257	5.0	190	88-2800	4-2¾x7‡‡	Y	Own	4	Own	SF	H	5.63–7.20	Own	L4IHV	389	662	a	TX	60	8‡‡x3½x¼	T
15	. . . . . T-33	2½–6	1785	136	196	. . . . .	5200	7.50/20D	9.75/20	Own 286	6-3½x4½	286	4.9	205	90-2600	4-2¾x7‡‡	Y	Own	4	Own	SF	R	6.43–7.16	Own	L4IHV	480	766	a	TX	60	8‡‡x3½x¼	T
16	. . . . . T-33H	2½–6½	2135	136	196	. . . . .	6520	8.25/20D	10.50/20	Own 286	6-3½x4½	286	4.9	205	90-2600	4-2¾x7‡‡	Y	Own	5	Own	SF	R	6.43–7.16	Own	L4IHV	528	846	a	TX	60	9 x3½x ⅜	T
17	. . . . . T-46	3½–7	2485	136	196	. . . . .	7450	8.25/20D	10.50/20	Own 331	6-3¾x5	331	4.7	230	94-2500	4-2½x8‡‡	Y	Own	5	Own	2F	R	7.38–9.41	Own	TWs41A	581	916	a	TX	60	9 x3½x ⅜	TL
18	. . . . . T-61	4–8	4835	136	196	. . . . .	8390	9.00/20D	10.50/24	Own 400	6-4¼x5	400	4.7	296	110-2300	4-2½x8‡‡	Y	Own	5	Own	2F	R	7.34–9.19	Own	TWs41A	581	916	a	TX	60	9 x3½x ⅜	TL
19	. . . . . T-61H	5–10	5175	136	196	. . . . .	8995	9.00/20D	11.25/24	Own 400	6-4¼x5	400	4.7	296	110-2300	4-2½x8‡‡	Y	Own	5	Own	SF	H	5.63–7.40	Own	L4IHV	393	663	a	TX	72	8x3½x¼	C
20	. . . . (c.o.e.) T-73	3–4½	2785	94	142	. . . . .	6160	32x6D	34x7	Own 257	6-3 1/8 x4½	257	5.1	190	80-2500	4-2¾x7‡‡	Y	Own	4	Own	SF	H	6.50–7.20	Own	L4IHV	437	742	a	TX	72	8x3½x¼	CCCCCC
21	. . . . (c.o.e.) T-73H	4–6	2940	94	142	. . . . .	6320	32x6D	9.00/20	Own 257	6-3 1/8 x4½	257	5.1	190	80-2500	4-2¾x7‡‡	Y	Own	4	Own	SF	R	6.50–7.20	Own	L4IHV	437	742	a	TX	72	8x3½x¼	
22	. . . . (c.o.e.) T-74	4–6	3695	94	142	. . . . .	7185	34x7D	9.75/20	Own 331	6-3¾x5	331	4.7	230	94-2500	4-2½x8‡‡	Y	Own	4	Own	2F	R	8.50–9.43	Own	L4IHV	528	846	a	TX	72	8x3½x¼	
23	. . . . (c.o.e.) T-74H	5–7	4150	94	142	. . . . .	7810	34x7D	9.75/22	Own 331	6-3¾x5	331	4.7	230	94-2500	4-2½x8‡‡	Y	Own	5	Own	2F	R	7.38–9.41	Own	Ws41A	581	920	a	TX	72	9 x4x ⅜	CCC
24	. . . . (c.o.e.) T-75	5–7½	5880	94	160	. . . . .	9350	9.00/20D	10.50/20	Own 400	6-4¼x5	400	4.7	296	110-2300	4-2.7x8‡‡	Y	Own	5	Own	2F	R	7.34–9.19	Own	Ws41A	581	920	a	TX	72	9 x4x ⅜	
25	. . . . (c.o.e.) T-78	7–10	6480	94	160	. . . . .	10325	9.75/20D	40x10	Own 450	6-4½x5	450	4.7	340	126-2300	4-2.7x8‡‡	Y	Own	5	Own	2F	R	7.34–9.19	Own	Ws41A	581	920	a	TX	72	9 x4x ⅜	
26	Gramm AX4	1–1½	795	131	180	11000	3350	6.00/20*8	7.50/20	Con W10	4-3½x4¼	200	4.7	121	50-2800	3-2½x5½	N	WG T9	4	Cla B373	BF	H	5.1 *6.37	Cla F266	L4IH	265	. . . .	a	TX	51¾	7x2¾x¼	T
27	. . . . . AX6	1–1½	895	131	180	11000	3550	6.00/20*8	7.50/20	Con 25A	6-3½x4	214	5.3	142	71-3200	4-2¼x6½	N	WG T9	4	Cla B373	BF	H	5.1 *6.37	Cla F266	L4IH	265	. . . .	a	TX	51¾	7x2¾x¼	T
28	. . . . . BX4	1½–2	895	131	210	12500	3525	6.00/20D	8.25/20	Con W10	4-3½x4¼	200	4.7	121	50-2800	3-2½x5½	N	WG T9	4	Tim 53300	BF	H	4.57*6.6	Cla F266	L4IH	265	. . . .	a	TX	51½	7x2¾x¼	T
29	. . . . . BX6	1½–2	995	131	210	12500	3725	6.00/20D	8.25/20	Con 25A	6-3½x4	214	5.3	142	71-3200	4-2¼x6½	N	WG T9	4	Tim 53300	BF	H	4.57*6.6	Cla F266	L4IH	265	. . . .	a	TX	51½	7x2¾x¼	T
30	. . . . . BXF	1½–2	1495	131	210	12500	4000	6.00/20D	8.25/20	Lyc ASD	6-3¾x4½	299	4.9	198	85-2800	4-2¾x9½	N	Cla 185F	4	Tim 53300	BF	H	4.57*6.6	Cla F266	L4IH	265	. . . .	a	TX	51½	7x2¾x¼	T
31	. . . . . BF	2–3	1695	140	210	12000	4300	6.50/20D	8.25/20	Lyc ASD	6-3¾x4½	299	4.9	198	85-2800	1-2¾x9½	N	Cla 185F	4	Tim 54413H	BF	H	4.12*6.8	Tim 31000H	L4IH	276	. . . .	a	TX	60½	7x2¼x¼	T
32	. . . . . CX4	2–3	1095	131	210	14000	3950	6.50/20D	9.00/20	Con W20	4-4¼x4½	227	4.7	142	55-2400	3-2½x5½	N	WG T9	4	Tim 54413H	BF	H	4.12*6.8	Tim 31000H	L4IH	276	. . . .	a	TX	51¾	10x2¾x¼	TP
33	. . . . . CX6	2–3	1295	131	210	14000	4150	6.50/20D	9.00/20	Con 20C	6-3¾x4¼	248	5.0	160	70-3000	7-2¾x10	N	WG T9	4	Tim 54413H	BF	H	4.12*6.8	Tim 31000H	L4IH	276	. . . .	a	TX	77¼	7x2¼x¼	T
34	 C	2–3	1795	160	224	14000	4820	7.00/20D	9.00/20	Her JXC	6-3¾x4¾	282	5.3	176	73-2800	7-2½x10‡‡	N	Cla 185F	4	Tim 54413H	BF	H	4.12*6.8	Tim 31000H	L4IH	276	. . . .	a	TX	51¾	10x2¾x¼	C
35	. . . . . CXH	2–3	1345	131	210	14000	4300	6.50/20D	9.00/20	Her JXC	6-3¾x4¼	282	5.4	176	72-2800	7-2½x10‡‡	N	Cla 185F	4	Tim 54413H	BF	H	4.12*6.8	Tim 31000H	L4IH	276	. . . .	a	TX	77¼	7x2¼x¼	T
36	. . . . . CF	2–3½	1895	160	224	14000	4900	7.50/20D	9.00/20	Lyc ASD	6-3¾x4½	299	4.9	198	85-2800	4-2¾x9½	N	Cla 185F	4	Tim 54413H	BF	H	4.12*6.8	Tim 31000H	L4IH	276	. . . .	a	TD	77¼	7x2¼x¼	T
37	. . . . . CXF	2–3½	2395	160	224	14000	5100	7.50/20D	9.00/20	Con 20R	6-4¼x4¾	380	4.7	238	88-2400	7-2¾x13 ⅜	N	BL 554	4	Tim 54413H	BF	H	4.12*6.8	Tim 31000H	L4IH	330	. . . .	a	TD	51¾	10x2¾x¼	TP
38	. . . . . DX	2½–4	1795	131	210	17000	4650	6.50/20D	9.75/20	Wau 6BK	6-3¾x4¾	282	. . .	190	85-3200	7-2¾x10¼	N	Cla 200	5	Tim 56410H	BF	H	4.44*7.4	Tim 31000H	L4IHV	330	. . . .	a	TD	77¼	7x2½x¼	T
39	. . . . . D	2½–4	1995	160	224	17000	5100	7.50/20D	9.75/20	Her JXD	6-4x4¼	320	5.3	204	84-2800	7-2¾x10‡‡	N	Cla 200	5	Tim 56410H	BF	H	4.44*7.4	Tim 31000H	L4IHV	330	. . . .	a	TD	77¼	7x2½x¼	T
40	. . . . . DF	2½–4	2695	160	260	17000	5300	7.50/20D	9.75/20	Con 21R	6-4½x4¾	428	4.6	268	100-2200	7-2¾x13 ⅜	N	BL 554	4	Tim 56410H	BF	H	4.44*7.4	Tim 31000H	L4IHV	330	. . . .	a	TD	77¼	7x2¼x¼	T
41	. . . . . EX	3–4	2295	160	224	17000	5200	8.25/20D	9.75/20	Con E601	6-3¾x4¾	318	4.5	203	80-2700	7-2¾x12‡‡	N	Cla 200	5	Tim 56410H	BF	H	4.44*7.4	Tim 31000H	L4IHV	330	. . . .	a	TD	77¼	7x2¼x¼	TP
42	. . . . . E	3–4½	2595	160	224	20700	5950	8.25/20D	9.75/20	Her WXC3	6-4¼x4½	383	5.0	270	108-2800	7-2¾x13¼	Y	Cla R900	5	Tim 58200H	BF	H	4.55*7.8	Tim 32500	L4IHV	375	. . . .	a	TD	74¼	12x2¾x¼	TP
43	(D) . . . . . ED	3–4½	3995	160	224	20700	6100	8.25/20D	9.75/20	Bud D6-415	6-4x5½	415	11.7	264	93-2000	7-3x11½	Y	Cla R900	5	Tim 58200H	BF	H	4.55*7.8	Tim 32500	L4IHV	375	. . . .	a	TD	90	8¾x3¼x¼	LDX
44	. . . . . EY190	3	3595	190	190	16000	6750	7.50/20D	9.00/20	Con 20R	4½x4¾	380	4.7	238	88-2400	7-2¾x13 ⅜	Y	Co Rus4	4	Wis 69317H	2F	H	5.9 *8.4	Tim 32500	L4IHV	375	. . . .	a	TD	119 ⅜	8¾x3¼x½	LDX
45	. . . . . GY	4	4345	190	210	18000	7700	8.25/20D	9.75/20	Con 21R	6-4½x4¾	428	4.6	268	100-2200	7-2¾x13 ⅜	Y	Cla R900	5	Wis 1237H	2F	H	5.75*8.9	Tim 33000	L4IHV	466	. . . .	a	TD	67	12x2½x¼	TP
46	. . . . . G	4–6	3695	150	225	24000	7950	9.00/20D	10.50/20	Con 21R	6-4½x4¾	428	4.6	268	100-2200	7-2¾x13 ⅜	N	BL 744	5	Wis 1237H	2F	H	4.29*7.2	Tim 33000	L4IHV	466	. . . .	a	TD	67	12x2½x¼	TP
47	. . . . . GF	4–6	5500	150	225	24000	9050	9.75/20D	10.50/20	Her HXC	6-5¼x6	779	4.5	505	143-1600	7-3½x17	N	BL 735	5	Wis 1627KW	2F	H	6.3 *8.0	Tim 27450	W941A	576	. . . .	a	TD	73¼	12x2½x¼	TP
48	. . . . . GW	5–7½	5175	157	240	30000	9500	9.75/20D	11.25/20	Con 21R	6-4½x4¾	428	4.1	268	100-2200	7-2¾x13 ⅜	Y	Cla R900	5	Wis 1737KW	2F	H	5.75*8.0	Tim 27450	W941A	576	. . . .	a	TD	73¼	12x2½x¼	TP
49	(D) . . . . . GWD	5–7½	6495	157	240	30000	10000	10.50/20D	11.25/20	Cum H Die.	6-4½x6	672	17.	440	125-1800	7-3¼x16½	Y	BL 735	5	Wis 1737KW	2F	H	5.75*8.0	Tim 27450	W941A	576	. . . .	a	TD	141½	8¾x3½x¼	LDX
50	. . . . . HY	5	6595	210	236	22000	10100	9.00/20D	9.75/20	Con 16H	6-4¾x5½	611	4.1	382	127-2300	7-3x13‡‡	Y	Fu HU16	4	Wis12527KW	2F	H	4.00*8.0	Tim 27450	W941A	576	. . . .	a	TD			LDX
51	Grass-Premier . . 545	3–4	2400	130	176	18000	5575	7.50/20D	8.25/20	Wau 6BK	6-3¾x4¾	282	5.1	180	85-3200	7-2¾x10¼	N	Fu 5A290	5	Tim 56200H	SF	H	6.16–7.4	Tim 31000H	L4IHV	328	353	A	TX	58	8x¼x3½	T
52	 555	4–5	3600	130	Op	20000	6100	8.25/20D	9.00/20	Wau 6-110-3	6-4x4¾	358	5.2	254	110-2800	7-2⅛x12½	Y	Fu 5A380	5	Tim 58200H	SF	H	6.8–7.8	Tim 33000H	L4IHV	374	397	A	TD	58	9x¼x4	T
53	 565	5–7	4400	136	Op	25000	8465	9.00/20D	9.75/20	Wau 6-110-3	6-4x4¾	358	5.2	254	110-2800	7-2⅛x12½	Y	Fu 5A380	5	Eat 2622	2F	R	8.05–9.43	Tim 35000H	L4IHV	398	396	A	TD	60	10x¼x4	T
54	 575	7–10	5400	136	Op	30000	9450	9.75/20D	10.50/20	Wau 6-125-4	6-4½x5½	462	5.1	324	125-2600	7-3x12½	Y	Fu 5A53	5	Wis 1737	2F	R	8.05–9.15	Tim 35000H	L4IHV	453	412	A	TD	60	12x¼x4	T
55	Hahn HB-3	2	1245	134	Op	12000	3900	7.00/20D	32x6	Wau 6BK	6-3¼x4¼	282	5.1	190	82-2800	7-2½x10¼	N	WG T9	4	Cla B373	SF	H	** 5.66	Cla F266	L4IH	223	. . . .	G	TX	Opt	5¾x2¼x¼	P
56	. . . . . HB-4	2	1400	136	Op	14000	4500	7.50/20D	32x6	Wau 6BK	6-3¼x4¼	282	5.1	190	82-2800	7-2½x10¼	N	WG T9	4	Tim 53300H	SF	H	** 6.6	Tim 30000H	L4IH	269	. . . .	G	TX	Opt	5¾x2¼x¼	P
57	. . . . . HB-5	2½	1770	138	Op	18000	5400	8.25/20D	34x7	Wau 6BK	6-3¼x4¼	282	5.1	190	82-2800	7-2½x10¼	N	Fu MLU	4	Tim 54410H	SF	H	** 5.8	Tim 31000H	L4IH	355	. . . .	G	TD	Opt	6x2½x¼	P
58	. . . . . HB-6	3	1950	142	Op	20000	6050	9.00/20D	9.00/20	Wau 6BK	6-3¼x4¼	282	5.1	190	82-2800	7-2½x10¼	Y	Fu 5A290	5	Tim 56410H	SF	H	** 5.14	Tim 31000H	L4IH	377	. . . .	G	TD	Opt	6x2½x¾	P
59	 250	3	2625	148	Op	22000	6300	9.00/20D	36x8	Wau 6MZ	6-4¼x4¾	404	4.6	255	90-2500	7-2¾x12½	Y	Fu 5A380	5	Tim 56200H	SF	H	** 5.14	Tim 31000H	L4IH	390	. . . .	G	TD	Opt	7x3x¼	P
60	 300	3½	2820	150	Op	22000	6700	9.00/20D	9.75/20	Wau 6MZ	6-4¼x4¾	404	4.6	255	90-2500	7-2¾x12½	Y	Fu 5A380	5	Tim 58205H	SF	H	** 6.8	Tim 33000H	L4IHV	660	. . . .	G	TD	Opt	7x3x¼	P
61	. . . . . HD-2	4	3010	154	Op	25000	7600	9.75/20D	9.75/20	Wau 6MZ	6-4¼x4¾	404	4.6	255	90-2500	7-2¾x12½	Y	Fu 5A380	5	Tim 58205H	SF	H	** 6.8	Tim 33000H	L4IHV	660	. . . .	G	TD	Opt	7x3x¼	P
62	. . . . . HD-3	4–6	3375	162	Op	26000	9050	9.75/20D	9.75/20	Wau 6MZ	6-4¼x4¾	404	4.6	255	90-2500	7-2¾x12½	Y	Fu 5A380	5	Tim 58205H	SF	R	** 6.8	Tim 35000H	L4IHV	760	. . . .	G	TD	Opt	10x3x ⅜	PD
63	 440	5–6	4700	165	Op	26000	9200	9.75/20D	10.50/20	Wau 68RK	6-4½x5½	517	4.6	335	110-2000	7-3x13½	Y	Cla R116	5	Cla B613	BF	H	** 7.2	Tim 35000H	L4IHV	760	. . . .	G	TD	Opt			PD
64	Hendrickson 158A	2½	1760	89	210	17000	5400	8.25/20D	9.00/20	Wau 6BK	6-3¾x4¼	282	5.1	180	85-3200	7-2½x10¼	Y	Cla R116	5	Cla B613	BF	H	5.66–6.87	Cla F320	L4IH	350	450	a	DX	68	8x3x ⅜	C
65	. . . . . (12) 198	3	3100	100	225	19000	6500	9.00/20D	9.75/20	Wau 6-110	6-4x4¾	358	4.6	254	110-2800	7-2⅛x12½	Y	Fu 5A38	5	Tim 58200H	SF	R	5.28–7.45	Tim 35000H	L4IHV	500	658	a	TD	Opt	8x3x ⅜	P
66	 248	4	3600	100	225	24000	8200	9.75/20D	10.50/22	Wau 6-110	6-4x4¾	358	4.6	254	110-2800	7-2⅛x12¼	Y	Fu 5A38	5	Tim 75733H	w/2	R	7.33–9.45	Tim 35000H	L4IHV	717	862	a	TD	Opt	8x3x ⅜	P
67	 328	5	4200	100	250	32000	10600	9.75/20D	10.50/24	Wau 125	6-4½x5½	462	4.6	324	125-2600	7-3x13¾	Y	Fu 5A53	5	Tim 76733H	w/2	R	6.02–9.2	Tim 27450	L4IHV	717	862	a	TD	Opt	8x3x ⅜	P
68	Hug. 12D	1½	1455	118	130	12000	4550	7.50/20D	9.00/20	Wau 6BL	6-3 1/8 x4¼	245	5.4	162	72-3000	7-2½x10¼	N	Fu 5B290	5	Cla B642	SF	H	6.42*7.16	Cla F308	L4IH	342	578	a	T	51¼	8x3x¼	T
69	. . . . . 15A	1¾–2½	985	136	156	10500	3750	5.50/20D	34x7	Wau 6BL	6-3 1/8 x4¼	245	5.4	162	72-3000	7-2½x10¼	N	Cla B360	4	Cla B377	SF	H	5.10*6.37	Cla F308	L4IH	262	438	a	T	69¼	8x3x¼	T
70	. . . . . 15D	1¾–2½	1025	118	130	11500	3750	5.50/20D	34x7	Wau 6BL	6-3 1/8 x4¼	245	5.4	162	72-3000	7-2½x10¼	N	Cla B360	4	Cla B470	SF	H	5.66*6.87	Cla F308	L4IH	272	452	a	T	51¼	8x3x¼	T
71	. . . . . 15T	1¾–2½	1025	130	150	20000	3750	5.50/20D	34x7	Wau 6BL	6-3 1/8 x4¼	245	5.4	162	72-3000	7-2½x10¼	N	Cla B360	4	Cla B470	SF	H	5.66*6.87	Cla F308	L4IH	272	452	a	T	61	8x3x¼	T
72	. . . . . 19A	2½–5	1375	130	156	18000	4578	7.50/20D	9.00/20	Wau 6BK	6-3¾x4¼	282	5.4	188	85-3000	7-2½x10¼	N	Fu 5B290	5	Cla B611	SF	H	5.66*6.87	Cla F308	L4IH	311	528	a	T	69¼	8x3x¼	T
73	. . . . . 19D	2½–5	1465	118	130	14500	4578	7.50/20D	9.00/20	Wau 6BK	6-3¾x4¼	282	5.4	188	85-3000	7-2½x10¼	N	Fu 5B290	5	Cla B642	SF	H	6.42*7.16	Cla F308	L4IH	342	578	a	T	61	8x3x¼	T
74	. . . . . 19T	2½–5	1465	130	150	26000	4578	7.50/20D	9.00/20	Wau 6BK	6-3¾x4¼	282	5.4	188	85-3000	7-2½x10¼	N	Fu 5B290	5	Cla B642	SF	H	6.42*7.16	Cla F318	L4IH	348	578	a	CD	61	8x3x¼	T
75	. . . . . 23S	2½–5	2320	146	201	16400	6400	8.25/20D	9.00/20	Bud H298	6-3¾x4½	298	5.3	200	80-2800	7-3x9½	N	Fu MLU	4	Cla B642	SF	H	6.42*7.16	Cla F318	L4IH	348	528	a	CD	89¼	8x3x¼	T
76	. . . . . 23A	2½–5	1785	156	188	19000	5120	7.50/20D	34x7	Bud H298	6-3¾x4½	298	5.3	200	80-2800	7-3x9½	N	Fu 5B290	5	Cla B611	SF	H	5.66*6.87	Cla F318	L4IH	348	578	a	CD	61	8x3x¼	T
77	. . . . . 23T	2½–5	1835	130	150	28000	5120	7.50/20D	9.00/20	Bud H298	6-3¾x4½	298	5.3	200	80-2800	7-3x9½	N	Fu 5B290	5	Cla B642	SF	H	6.42*7.16	Cla F318	L4IH	348	578	a	CD	61	8x3x¼	T
78	 418	3	5070	158	158	18165	8500	9.75/20D	9.75/20	Bud K428	6-4¼x4¾	428	4.8	280	107-2600	7-3x11½	Y	Fu MRUAY	4	Wis 1237H	SF	H	7.20*8.95	Shu 632-5	L4IH	620	894	pG	CD	72½	8x3x¼	T
79	. . . . . 42A	3–6	2350	166	195	22000	6800	9.00/20D	9.75/20	Bud K369	6-4 1/8 x4¾	369	4.8	234	99-2800	7-3x11½	N	Fu 5A380	5	Cla B805	SF	H	5.75*7.16	Cla F318	L4IH	380	660	a	CD	91½	8x3x¼	T
80	. . . . . 42T	3–6	2615	137	157	32000	7000	9.00/20D	9.75/20	Bud K369	6-4 1/8 x4¾	369	4.8	234	99-2800	7-3x11½	N	Fu 5A380	5	Wis 72000L	2F	H	5.00*7.27	Cla F318	L4IH	380	660	a	CD	62	8x3x¼	T
81	. . . . . 43A	4–8	3250	166	195	26000	7050	9.75/20D	10.50/20	Bud K428	6-4½x4¾	428	4.8	280	107-2600	7-3x11½	N	Fu 5A530	5	Wis 72000L	2F	H	5.00*7.27	Shu 632	L4IH	532	786	pG	CD	91½	8x3x¼	T
82	. . . . . 43T	4–8	3425	137	157	38000	7350	9.75/20D	10.50/20	Bud K428	6-4½x4¾	428	4.8	280	107-2600	7-

| | | |

Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Spd's	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Moreland...R-150	2½–3½	1600	168	180	15000	5050	7.00/20D	32x6	Her JXCM	6–3¼x4¼	282	4.7	197	85–2900	7–2½x10##	N	Spl 224	4	Tim 54411	BF	H	4.85–5.83	Tim 31000	L4IH	336	578	a	TD	93½	8x3## x¼	T
2	(Concl'd)..R–175	3–4	1850	168	180	17500	5300	7.50/20D	34x7	Her JXCM	6–3¼x4¼	282	4.7	197	85–2900	7–2½x10##	N	Spl 224	4	Tim 56400	BF	H	5.28–6.17	Tim 31000	L4IH	336	578	a	TD	93½	8x3## x¼	T
3	.....R–190	3½–4½	1980	180	180	19000	5800	8.25/20D	9.00/20	Her JXDM	6–4x4¼	320	4.7	224	95–2900	7–2½x10##	N	Spl 224	4	Tim 56400	BF	H	5.28–6.17	Tim 32501	L4IH	336	578	a	TD	105½	8x3## x¼	T
4	.....R–200	4–5	2495	180	180	20000	6300	8.25/20D	9.00/20	Her WXC3	6–4¼x4½	383	4.7	265	107–2800	7–2½x13½	N	Spl 3241	4	Tim 56400	BF	H	5.28–6.17	Tim 32501	L4IH	336	578	a	TD	104	8x3## x¼	T
5	.....E–220	4½–5½	3035	180	202	22000	6550	9.00/20D	36x8	Her WXC3	6–4¼x4½	383	4.7	265	107–2800	7–2½x13½	N	Spl 5241	4	Tim 58205	BF	H	5.25–6.14	Tim 35000	L4IHV	394	659	a	TD	103⅝	9 x3 x x	T
6	.....E–250	6T	3420	180	202	25000	7050	9.00/20D	9.75/20	Her WXC3	6–4¼x4½	383	4.7	265	107–2800	7–2½x13¾	N	Spl 5241	4	Tim 76733	2F	H	6.85–7.37	Tim 35100	L4IHV	486	867	a	TD	103⅝	9 x3 x x	T
7	.....H–300	7½T	4725	196	202	30000	9000	9.75/20D	42x9	Her RXB	6–4½x5¾	501	4.7	330	110–2200	7–3x12½	N	Spl 5241	4	Tim 76733	2F	R	6.86–7.89	Tim 26450	WAB	486	867	a	TD	115½	9 x3 x x	T
8	.....T–420	8–10	***	212	220	42000	11800	9.75/24D	44x10	Her HXB	6–5x6	707	4.5	460	148–2000	7–3½x17	N	Spl 7241	4	Tim 78733	2F	H	** 8.90	Tim 27050	WAB	757	1050	a	TD	125½	11x3 x x	T
9	(D).....R–150D	2–3T	3175	168	180	15000	5800	7.00/20D	32x6	Her DJXB	6–3 x4½	250	...	180	74–2600	7–3	Y	Spl 224	4	Tim 54411	BF	H	4.85–5.83	Tim 31000	L4IH	336	578	a	TD	93½	8x3## x¼	T
10	(D).....R–175D	3–4T	3425	168	180	17500	6100	7.50/20D	34x7	Her DJXB	6–3 x4½	250	...	180	74–2600	7–3	Y	Spl 224	4	Tim 56400	BF	H	5.28–6.17	Tim 31000	L4IH	336	578	a	TD	93½	8x3## x¼	T
11	.....E–220D	4½–5½	5420	180	202	22000	7750	9.00/20D	36x8	Her DRXB	6–4½x5½	474	...	350	125–2200	7–3x16½	Y	Spl 5241	4	Tim 58205	BF	H	5.25–6.14	Tim 35000	L4IHV	394	659	a	TD	103⅝	9 x3 x x	T
12	(D).....E–250D	6–T	5745	180	202	25000	8250	9.00/20D	9.75/20	Her DRXB	6–4½x5½	474	...	350	125–2200	7–3x16½	Y	Spl 5241	4	Tim 76733	2F	H	6.85–7.37	Tim 35100	L4IHV	486	867	a	TD	103⅝	9 x3 x x	T
13	(D).....H–300D	7½T	6345	196	202	30000	9900	9.75/20D	42x9	Her DRXB	6–4½x5½	474	...	350	125–2200	7–3x16½	Y	Spl 5241	4	Tim 76733	2F	R	6.86–7.89	Tim 26450	WAB	486	867	a	TD	115½	9 x3 x x	T
14	(D).....T–420D	8–10	***	212	220	42000	12800	9.75/24D	44x10	Her DHXB	6–5x6	707	4.5	530	176–1800	7–3½x7	Y	Spl 7241	4	Tim 78733	2F	H	** 8.90	Tim 27050	WAB	757	1050	a	TD	125½	11x3 x x	T
15	Netco.....A	2–4	1800	157	190	15000	5500	7.50/20D	7.50/20	Wau BL	6–3½x4¼	245	5.0	165	73–3200	7–2¼x10¼	Y	BL 224	4	Tim 54200H	8F	R	5.83–6.83	Tim 30020H	L4IHV	306	....	c	TD	Opt	6x3x¼	C
16	.....B	3–6	2400	160	200	20000	6500	8.25/20D	9.00/20	Wau BK	6–3¼x4½	282	5.0	180	84–3200	7–2½x10¼	Y	BL 3341	4	Tim 56300H	8F	H	6.83–5.71	Tim 31000H	L4IHV	355	....	c	TD	Opt	6x3x¼	C
17	C	4–7	2800	160	200	22000	7300	9.00/20D	9.75/20	Wau MK	6–4¼x4½	381	4.8	240	85–2500	7–2½x12½	Y	BL 334	4	Tim 58200H	8F	H	6.83–7.75	Tim 33000H	L4IHV	398	....	c	TD	Opt	7x3½x¼	C
18	.....E	5–8	3400	157	212	24000	8100	9.75/20D	9.75/20	Wau MZ	6–4¼x4¼	404	6.0	274	90–2400	7–2½x12½	Y	BL 334	4	Tim 65720H	WF	R	7.75–8.25	Tim 33000H	L4IHV	484	....	c	TD	Opt	7x3½x¼	C
19	.....J	6–9	4600	157	212	30000	9200	10.50/20D	10.50/20	Lyc AEC	8–3¾x4¼	420	5.2	300	120–2800	5–2¾x12¾	Y	BL 534	4	Tim 76730	2F	R	8.50–9.25	Tim 35000H	Ws4IA	663	....	c	CD	Opt	9x3½x¼	C
20	.....K	7–10	4900	168	212	32000	9900	10.50/24D	10.50/24	Wau 8RK	6–4½x5½	517	4.6	335	110–2300	7–3x13¼	Y	BL 724	4	Tim 78720	2F	R	9.92–10.3	Tim 27450	Ws4IA	757	....	c	CD	Opt	9x3½x¼	C
21	Reo (4).....6AP	½	445	117	118	4500	2168	6.00/16S	6.50/16S	Own	6–3 x4¼	209	5.4	145	70–2800	4–2¼x5	..	WG T83	3	Spl	S½	H	4.27–4.55	Own	L4IH	172	264	C	TX	25½	6x2½x½	C
22	.....1A4–1C4	1–1¼	595	139	166	9500	2750	6.00/20S	7.00/20	Own	6–3 x4½	209	5.4	145	70–2800	4–2¼x5	..	Own	4	Own	SF	H	5.83–5.28	Own	L4IH	191	286	C	TX	57½	6## x2½x##	C
23	.....1B4–1D4	1½–2½	695	139	166	11500	3200	6.00/20†S	7.00/20	Own	6–3½x5	230	5.8	152	68–2800	7–2½x10½	..	Own	4	Own	SF	H	5.83–5.28	Own	L4IH	246	366	C	TX	57½	7 x2½x x	C
24	.....1B4M	1½–2½	1025	139	139	11500	3900	6.50/20D	7.50/20	Own	6–3½x5	230	5.8	152	68–2800	7–2½x10½	..	Own	4	Own	SF	H	5.28–5.83	Own	L4IHV	246	366	C	TX	....	7 x2½x x	C
25	.....1D4M	1½–2½	1075	166	166	11500	4000	6.50/20D	7.50/20	Own	6–3½x5	230	5.8	152	68–2800	7–2½x10½	..	Own	4	Own	SF	H	5.28–5.83	Own	L4IHV	246	366	C	TX	....	7 x2½x x	C
26	.....1B4R–1D4R	2–2¾	761	139	166	12500	3353	6.00/20†S	7.50/20	Own	6–3¼x5	230	5.8	152	68–2800	7–2½x10½	..	Own	4	Own	SF	H	5.83–5.28	Own	L4IH	255	380	C	TX	57½	7 x2½x x	C
27	.....2B4–2D4	2–3	925	142	166	13500	3700	6.50/20D	7.50/20	Own	6–3½x5	268	5.5	175	75–2800	7–2½x10½	..	Own	4	Own	SF	H	5.28–5.83	Own	L4IH	289	438	C	TX	60½	7x3¼	C
28	.....2D4M	2–3	1325	166	166	13500	.....	7.00/20D	8.25/20	Own	6–3½x5	268	5.5	175	75–2800	7–2½x10½	..	Own	4	Own	SF	H	5.83–5.28	Own	L4IHV	289	438	C	TX	....	7½x3½¼	C
29	.....2B4R–2D4R	2½–3	1044	142	166	14500	.....	7.00/20D	7.50/20	Own	6–3½x5	268	5.5	175	75–2800	7–2½x10½	..	Own	4	Own	SF	H	5.83–5.28	Own	L4IH	289	438	a	FD	60½	7x3¼	C
30	.....2H (2J, 2K)	2–4	1435	142	184	16000	4475	7.00/20D	8.25/20	Own	6–3½x5	268	5.5	175	75–2800	7–2½x10½	..	Own	4	Own	8F	B	6.5 –7.17	Own	L4IH	349	524	a	FD	60½	7x3¼	C
31	2HR (2JR–2KR)	2½–4	1740	142	184	17000	.....	7.50/20D	8.25/20	Own	6–3½x5	268	5.5	175	75–2800	7–2½x10½	..	Own	4	Own	2F	H	** –7.1	Own	L4IH	349	524	a	FD	60½	7x3¼	C
32	.3H(3J,3K,3M)	3–5	2055	153	205	18500	5125	7.50/20D	9.00/20	Own	6–3½x5	309	5.0	200	85–2800	7–2½x10½	..	Own	4	Own	8F	H	6.14–7.17	Own	L4IH	399	660	a	FD	68½	8 x3¼x3	C
33	3HR (3JR–3KR)	3½–5	2570	153	205	19500	.....	8.25/20D	9.00/20	Own	6–3½x5	309	5.0	200	85–2800	7–2½x10½	..	BL	5	Own	2F	H	** –8.5	Own	L4IH	399	660	a	FD	68½	8 x3x3¼	C
34	...4H,4J,4K,4M	4–6	3080	170	205	22000	6280	9.00/20D	9.75/20	Own	8–3½x5	358	5.51	230	110–2800	7–2½x12½	..	BL	5	Own	2F	H	** –8.5	Own	L4IHV	399	660	a	FD	62½	10x3x¼	C
35	Schacht.....10B	1½	1095	124	172	11500	4350	6.50/20D	7.50/20	Her JXB	6–3½x4¼	263	5.4	164	68–2800	7–2½x10##	N	WG T9	4	Tim	BF	H	6.6–5.14	Tim	L4IH	254	380	G	TX	Opt	8x3x	C
36	.....12B	2	1295	132	177	12200	4900	32x6D	32x6	Her JXB	6–3½x4¼	263	5.4	164	68–2800	7–2½x10##	N	Own	4	Tim	8F	H	6.2–5.66	Tim	L4IH	....	....	G	TX	Opt	8x3x	C
37	.....15B	2½–3½	1495	126	172	13000	4580	7.50/20D	8.25/20	Her JXC	6–3¾x4¼	282	5.35	176	73–2800	7–2½x10##	N	Fu 5A29	5	Tim	BF	H	5.83–6.8	Tim	L4IHV	312	527	G	TX	Opt	8x3x	C
38	.....18B	2½–4	1895	124	175	15000	5200	8.25/20D	8.25/20	Her JXD	6–4x4¼	320	5.3	204	84–2800	7–2½x10##	Y	Fu 5A29	5	Tim	BF	H	5.83–6.8	Tim	L4IHV	312	527	G	TX	Opt	8x3x	C
39	.....20B	3–4½	2095	124	188	17500	5400	8.25/20D	9.00/20	Her JXD	6–4x4¼	320	5.3	204	84–2800	7–2½x10##	Y	Fu 5A38	5	Tim	BF	H	7.4–5.71	Tim	L4IHV	342	578	G	TX	Opt	8x3x	C
40	.....25B	3½–5	2595	146	199	19500	5750	8.25/20D	9.00/20	Her WXC2	6–4½x4½	360	4.7	238	85–2400	7–2½x13½	Y	Fu 5A38	5	Tim	BF	H	7.4–5.71	Tim	L4IHV	342	578	G	TX	Opt	8x3x	C
41	.....28B	4–5½	2895	146	199	23000	6600	9.00/20D	9.75/20	Her WXC3	6–4¼x4½	383	4.4	265	106–2800	7–2½x13½	Y	Fu 5A38	5	Tim	BF	H	7.8–6.14	Tim	L4IHV	435	758	G	TX	Opt	8x3x	C
42	.....35HA	5–7	3725	146	227	24000	7400	9.75/20D	9.75/20	Her WXC2	6–4½x4½	360	4.7	238	85–2400	7–2½x13¾	Y	Fu 5–A–38	5	Own	2F	R	7.14–8.94	Shu	L4IHV	507	768	H	TD	Opt	8½x3x	P
43	.....40H	5–7	4295	156	239	25500	7600	9.75/20D	9.75/20	Her YXC	6–4½x4¾	428	4.4	280	93–2200	7–3x15	Y	Fu 5–A–53	5	Own	2F	R	8.15–10.2	Shu	L4IHV	507	768	H	TD	Opt	8½x3x	P
44	.....40HB	7–9	4695	156	239	29500	7750	10.50/20D	10.50/20	Her YXC	6–4½x4¾	428	4.4	280	93–2200	7–3x15	Y	Fu 5–A–53	5	Wis	2F	R	8.15–10.2	Shu	L4IHV	556	906	G	TD	Opt	8½x3x	P
45	.....66HA	8–11	5895	154	251	35000	9820	10.50/24D	10.50/24	Her RXC	6–4½x5½	529	4.9	355	115–2200	7–3x15	Y	Fu 5–A–53	5	Own	2F	R	8.15–10.2	Shu	Ws4IA	636	851	G	TD	Opt	8½x3x	P
46	.....(T) TRD	10	4150	150	174	35000	7100	9.00/20D	9.00/20	Her YXC	6–4½x4¾	428	4.4	280	93–2200	7–3x15	Y	Fu 5–A–53	5	Own	2F	R	7.14–8.94	Shu	L4IHV	507	768	H	TD	Opt	7x3x¼	P
47	.....(T) TRDA	12	4350	150	174	39000	7226	9.75/20D	9.75/20	Her YXC3	6–4¼x4½	478	4.4	318	103–2200	7–3x15	Y	Fu 5–A–53	5	Own	2F	R	7.14–8.94	Shu	L4IHV	507	768	H	TD	Opt	7x3x¼	P
48	.....(T) TRDB	15	4595	150	174	45000	7326	9.75/20D	9.75/20	Her RXC	6–4½x5½	529	4.4	355	115–2200	7–3x15	Y	Fu 5–A–53	5	Wis	2F	R	7.14–8.94	Shu	L4IHV	507	780	H	TD	Opt	7x3x¼	P
49	Ster. (c)FB50 De L	2–2½	1905	177	207	13000	4900	7.00/20D	8.25/20	Wau 6BK	6–3¼x4¼	282	5.4	185	84–3200	7–2½x10¼	N	WG T9	4	Own	8F	R	4.86–6.6	Tim 33000H	L4IH	256	616	P	TX	91	10x3¼x¼	L
50	.. (c)FB60 De L	2½–3	2055	177	207	15000	5150	7.00/20D	8.25/20	Wau 6BK	6–3¼x4¼	282	5.4	185	84–3200	7–2½x10¼	N	Own UC6	4	Own	8F	R	5.29–7.4	Tim 33000H	L4IHV	328	754	a	TX	91	10x3¼x¼	L
51	(b, c)FB70 De L	3–4	2305	177	207	17000	5475	7.50/20D	9.00/20	Wau 6BK	6–3¼x4¼	282	5.4	185	84–3200	7–2½x10¼	Y	Own UC11	5	Own	8F	R	5.72–7.8	Tim 33000H	L4IHV	370	794	a	TX	91	10x3¼x¼	L
52	.....(b) FB80	3½–4½	2915	177	207	22000	6525	8.25/20D	9.75/20	Wau 6MK	6–4¼x4¾	381	6.1	258	85–2500	7–2½x12½	Y	Own UC11	5	Own	2F	R	5.72–7.8	Tim 33000H	L4IHV	370	794	a	TX	91	10x3¼x¼	L
53	.....(b) FD90	4–5	3175	177	207	22000	7175	9.00/20D	9.75/20	Wau 6MK	6–4¼x4¾	381	6.1	258	85–2500	7–2½x12½	Y	Own UC11	5	Own	CD	R	8.56–10.8	Tim 33000H	L4IHV	370	794	a	TX	93	10x3¼x¼	L
54	.....(b, c) FC90	4–5	3090	179	209	22000	6775	8.25/20D	9.75/20	Wau 6BK	6–3¼x4¼	282	5.4	185	84–3200	7–2½x10¼	N	BL2252	5	Own UC2	4	Own	2F	R	6.85–9.4	Tim 35100H	L4IHV	487	990	a	TX	107	12x3¼x¼	L
55	.....(b) FD97	5–6	4825	195	225	26000	8235	9.75/20D	10.50/24	Wau 6SRL	6–4½x5½	462	4.5	300	102–2400	7–3x13¾	Y	Own UC2	4	Own	2F	R	6.86–9.2	Tim 35100H	L4IHV	487	1030	a	TX	107	12x3¼x¼	L
56	.....(b) FD115	6–7	5225	195	225	32000	8685	9.75/20D	11.25/24	Wau 6-125	6–4½x5½	462	5.0	324	125–2400	7–3x13¾	Y	Own UC2	4	Own	CD	R	8.3–10.8	Tim 35000N	O2IMV	576	744	s	TX	105	12x3¼x¼	L
57	.....(b) FC100	5–6	4480	195	225	26000	7835	9.75/20D	9.75/24	Wau 6MZ	6–4¼x4¾	404	5.7	274	90–2400	7–2½x12½	Y	Own UC2	4	Own	CD	R	8.3–10.8	Tim 26450N	O2IMV	528	746	s	TX	105	15x3¼x¼	L
58	.....(b) FC135	6–7	4905	195	225	34000	8835	40x8D	10.50/24	Wau 6SRL	6–4½x5½	462	4.5	300	102–2400	7–3x13¾	Y	Own UC2	4	Own	CD	R	8.3–10.8	Tim 26452N	O2IMV	646	746	s	JX	107	9¼x3¼x½	L
59	.....(b) HC140	7–8	5030	189	219	36000	9485	9.75/22D	10.50/24	Wau 6SRL	6–4½x5½	462	4.5	300	102–2400	7–3x13¾	Y	Own UC9	4	Own	CD	R	8.2–9.92	Tim 27452N	O2IMV	704	768	s	JX	109	9¼x3¼x½	L
60	.....(b) HC170	9–10	7175	189	228	44000	10485	10.50/22D	13.50/24	Wau 6RB	6–5x5¼	677	4.7	440	125–2000	4–3½x11½	Y	Own UC9	4	Own	CD	R	8.2–9.92	Tim 27452N	O2IMV	704	768	s	JX	109	9¼x3¼x½	L
61	Stewart.....40H	½	495	113	113	4600	2110	6.00/16S	6.50/16	Wau	4–3¼x4	133	5.8	98	35–2400	3–2½x4	N	WG	3	Spl	8F	H	4.27–5.1	Spl	L4IH	216	388	a	TX	44	6x2¼x x	T
62	.....60H	¾	545	128	128	.....	2325	6.00/16S	6.50/16	Con	6–3x4	170	6.2	120	60–2800	4–2¼x1##	N	WG	3	Spl	SF	H	5.1 –1	Spl	L4IH	216	388	A	TX	52	6x2½x x	T
63	.....41B	1	685	134	145	7500	2990	6.50/18S	7.00/18	Wau	6–3½x4¼	228	5.0	155	65–2800	7–2½x10¼	N	WG	4	Cla	8½	H	5.1–4.25	Cla	L4IH	254	....	a	TX	51½	6x2½x x	T
64	.....(5).46H	1¼	695	134	176	11000	3310	6.50/20S	7.00/20	Wau	6–3½x4¼	228	5.0	155	65–2800	7–2½x10¼	N	WG	4	Cla	SF	H	5.6–6.37	Cla	L4IH	254	472	a	TX	51½	7½x2¾x x	T
65	.....(5).47H	2	895	134	190	12000	4070	6.50/20D	7.50/20	Wau	6–3½x4¼	228	5.0	155	65–2800	7–2½x10¼	N	WG	4	Cla	SF	H	6.37–6.88	Cla	L4IH	266	512	A	TX	51½	7½x2¾x x	T
66	.....48H	2½	1395	145	190	14000	4570	7.00/20D	8.25/20	Wau	6–3½x4¼	245	5.4	165	70–2800	7–2½x10¼	N	WG	4	Cla	SF	H	6.37–6.88	Cla	L4IH	349	678	a	TX	64½	7½x2¾x x	T
67	.....50H	2½	1095	134	190	13000	4250	6.50/20D	7.50/20	Wau	6–3½x4¼	245	5.4	165	70–2800	7–2½x10¼	N	WG	4	Cla	SF	H	6.37–6.88	Cla	L4IH	349	678	a	TX	64½	7½x2¾x x	T
68	.....49H	3	1695	145	220	16000	5325	7.00/20D	9.00/20	Wau	6–3¾x4¼	282	5.4	190	80–2800	7–2½x10¼	N	Fu	5	Cla	SF	R	7.16–6.4	Cla	L4IHV	349	678	a	TX	64½	9½x2¾x¼	T
69	.....32X	3	2190	165	220	18000	5460	7.00/20D	9.00/20	Lyc	6–3¾x4¼	299	5.0	205	85–2750	4–2½x9¾	N	BL	5	Cla	SF	R	7.16–6.4	Cla	B4IH	478	790	E	TX	79	9 x2¾x x	T
70	.....58X	3½	2490	160	235	20000	6250	7.50/20D	10.50/20	Wau	6–4¼x4¼	381	5.2	240	85–2500	7–2½x12½	Y	Fu	5	Tim	WF	R	7.25–8.3	Cla	B4IMV	550	898	E	TX	71½	9 x2¾x x	T
71	.....18XS	3½	2890	160	235	20000	6800	7.50/20D	10.50/20	Wau	6–4¼x4¼	381	5.2	240	85–2500	7–2½x12½	Y	Fu	5	Tim	WF	R	7.25–8.3	Eat	B4IMV	550	898	E	TX	75¾	9 x2¾x x	T
72	38–6	3½–5	4090	170	241	25000	7600	9.00/20D	10.50/22	Wau	6–4½x5½	462	4.6	300	100–2000	7–3x13½	Y	BL	5	Tim	WF	R	7.25–8.3	Eat	B4IMV	550	898	E	TX	73½	9 x2¾x x	T
73	38–8	3½–5	4090	170	241	25000	7600	9.00/20D	10.50/22	Lyc	8–3¾x4¼	420	5.2	300	130–2800	5–2¾x12	Y	BL	5	Tim	WF	R	8.2–9.0	Eat	B4IMV	614	1004	E	TX	73½	9½x2¾x x	T
74	.....31X	5–6	5490	165	235	30000	9340	9.75/20D	10.50/22	Wau	6–4½x5½	517	4.5	330	110–2000	7–3x13¼	Y	BL	5	Tim	WF	R	8.2–9.0	Eat	B4IMV	614	1004	E	TX	73½	9½x2¾x x	T
75	Studebaker....Ace	1½–2	565	125	157	11000	3255	6.00/20†S	7.50/20	Own	6–3¼x4¼	217	6.0	161	73–2800	4–2½x5##	N	WG T9	4	Cla B373	8F	H	5.1–6.8	Cla F266	B4IH	246	378	a	T	52	6## x2¾x x	T
76	.....(c.o.e.) Ace	1½–2	595	101	125	11000	.....	6.00/20†S	7.50/20	Own	6–3¼x4¼	217	..	173	73–2800	4–2½x5##	N	WG T9	4	Cla B373	8F	H	5.1 –6.8	Cla F280	B4IH	246	378	a	T	60	6## x2¾x4½	T
77	.....Boss	2–3	945	133	175	13500	3970	6.50/20D	8.25/20	Wau 6BM	6–3¾x4¼	263	5.4	173	79–2800	7–2½x10¼	Y	WG T9	4	Tim 54410	8F	H	4.85–6.8	Tim 31020	B4IH	316	480	D	T	60	7x2¾x x	T
78	.....(c.o.e.) Boss	2–3	945	101	157	13500	.....	6.50/20D	8.25/20	Wau 6BM	6–3¾x4¼	263	..	173	79–2800	7–2½x10¼	Y	WG T9	4	Tim 54410	8F	H	4.85–6.8	Tim 31100	B4IH	316	480	D	T	60	7x2¾x x	T
79	.....Mogul	2½–3½	1475	141	183	16000	5160	6.50/20†D	9.00/20	Wau 6BK	6–3¾x4¼	282	5.4	190	84–2800	7–2½x10¼	Y	Cla 200V	5	Tim 56410	8F	H	6.16–7.4	Tim 31020	B4IHV	420	647	D	T	60	8x2¼x¼	T
80	.....Big Chief	3–4	1845	141	183	18200	5845	6.50/20†D	9.75/20	Wau	6-110-358	6–4x4¼	358	5.1	254	110–2800	7–2½x12½	Y	Cla 270V	5	Tim 58200	8F	H	6.14–7.8	Tim 31020	B4IHV	420	647	D	T	60	8x2¼x¼	T
81	Ward La Fr..25R14	2½	2740	196	208	14000	6000	7.50/20D	7.50/20	Wau ML	6–4x4¾	358	6.2	228	80–2400	7–2½x12½	Y	Fu 5A380	4	Tim 54200H	8F	R	4.12–6.8	Tim 33000H	L4IHV	282	450	a	TD	90½	12x3x¼	B
82	.....25R16	3	2950	197	208	17000	6200	8.25/20D	8.25/20	Wau ML	6–4x4¾	358	6.2	228	80–2400	7–2½x12½	Y	Fu 5A380	4	Tim 56200H	8F	R	4.44–7.4	Tim 33000H	L4IHV	330	575	a	TD	90½	12x3x¼	B
83	.....25R18	3–4	3140	196	208	21000	6400	9.00/20D	9.75/20	Wau MK	6–4¼x4¾	381	6.5	242	85–2500	7–2½x12½	Y	Fu 5A380	4	Tim 58205H	8F	R	5.25–7.8	Tim 33000H	L4IHV	391	658	a	TD	90½	12x3x¼	B
		30R19/4	3550	197	226	21000	7000	9.00/20D	9.75/20	Wau MK	6–4¼x4¾	381	6.5	242	85–2500	7–2½x12½	Y	Fu 5A380	4	Tim 65200H	WF	R	5.0–9.25	Tim 35000H	L4IHV	391	658	a	TD	105	12x3¼x x	B
		30R19/4	3550	197	226	21000	7170	9.00/20D	9.75/20	Wau 8RL	6–4½x5½	462	4.6	300	102–2400	7–3x13½	Y	Fu 5A380	4	Tim 58205H	8F	R	5.25–7.8	Tim 35000H	L4IHV	391	658	a	TD	105	12x3¼x x	B
		30R19/4	3550	197	226	21000	7170	9.00/20D	9.75/20	Wau 8RL	6–4½x5½	462	4.6	300	102–2400	7–3x13½	Y	Fu 5A380	4	Tim 65200H	WF	R	5.0–9.25	Tim 35000H	L4IHV	391	658	a	TD	105	12x3¼x x	B
		30R19/4	3550	197	226	21000	7170	9.00/20D	9.75/20

| | | |

Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Spd's	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make	Location	Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location	Type	C-A Dimension (Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Indiana 12X4	1½–2	2650	131	Op	10000	4650	6.50/20D	7.50/20	Her JXC	6–3¾x4¼	282	5.4	176	73–2800	7–2½x10 H	Y	BL 2341	4	Tim 53210	SF	H	5.14–5.66	Wis F30B	L4IHV			260	412	G	TD	46¾	7 x2½x¼	T
2	.....14X4	2–2½	3950	140	Op	14000	5900	7.50/20D	8.25/20	Her JXC	6–3¾x4¼	282	5.4	176	73–2800	7–2½x10 H	Y	BL 2341	4	Tim 54413	SF	H	5.14–6.6	Wis F54H	L4IHV			260	528	G	TD	55½	7½x2¼x¼	T
3	.....16X4	2½–3	4850	156	Op	16000	7500	7.50/20D	8.25/20	Her WXC	6–4x4½	339	4.7	226	76–2400	7–2½x13¼	Y	BL 3341	4	Wis 5000L	SF	H	6.35–7.35	Wis F500	L4IHV			330	578	G	TD	72½	7½x3x¼	T
4	.....18X4	4½–5	5850	160	Op	21000	9000	9.00/20D	9.75/20	Her YXC	6–4¾x4¼	428	4.5	283	94–2200	7–3x14	Y	BL 5341	4	Wis 72000L	2F	H	7.06–8.00	Wis F213	L4IHV			492	867	G	TD	72	8½x3x	T
5	.....18X4A	4½–5	5400	160	Op	21000	8700	9.00/20D	9.75/20	Her YXC	6–4¾x4¾	428	4.5	283	94–2200	7–3x14	Y	BL 5341	4	Tim 58205H	SF	H	6.14–6.83	Wis F580H	L4IHV			345	785	G	TD	72	8x3x¼	T
6	.....20X4	5–6	7200	172	Op	24000	10600	9.75/20D	9.75/20	Her RXB	6–4½x5¼	501	4.5	330	106–2000	7–3x12¼	Y	BL 5341	4	Wis 1337H	2F	H	7.52–8.59	Wis F311H	L4IHV			582	975	G	TD	84	8¼x3x⅜	T
7	.....22X4	5½–6½	10000	185	Op	31000	13000	1.50/20D	10.50/20	Her HXB	6–5x6	707	4.5	455	148–2000	7–3½x17	Y	BL 7341	4	Wis 417W	2F	H	7.14–9.15	Wis 1737W	Ws4IA			648	975	G	TD	84	10x3x	T
8	Mar.-Herr..B5-4x4	1½–3	1345	132	...	.....	4040	6.00/20D	32x6	Ford V8	8–3 x3¾	221	5.3	138	80–3800	3–2x5½	N	WG T9	4	Ford	8F	R	5.14–6.6	Own	41H			319	421	a	2/41	58	7x2¼x	C
9	.....B6-4x4	1½–3	1395	157	...	.....	4094	6.00/20D	32x6	Ford V8	8–3 x3¾	221	5.3	138	80–3800	3–2x5½	N	WG T9	4	Ford	8F	R	5.14–6.6	Own	41H			319	421	a	2/41	83½	7x2¼x	C
10	.....B10-4	2–2½	2490	143	Op	.....	4430	6.50/20D	7.50/20	Her JXB	6–3¾x4¼	263	5.4	182	78–2800	7–2½x10 H	N	WG T9	4	Tim 53200	BF	H	5.14–6.6	TWH	41H			267	452	a	TX	60	7½x2½x	C
11	.....B20-4	2½–3	2820	143	Op	.....	4665	7.00/20D	7.50/20	Her JXC	6–3¾x4¼	282	5.3	196	84–2800	7–2½x10 H	N	Fu 5A29	5	Tim 53300	BF	H	5.66–6.6	TWH	41H			267	452	a	TX	60	7½x2½x	C
12	.....B30-4	3–3½	3250	143	Op	.....	5155	7.50/20D	8.25/20	Her JXD	6–4x4¼	320	5.3	224	95–2800	7–2½x10 H	N	Fu 5A29	5	Tim 54200	BF	H	5.8–6.8	TWH	41H			281	527	a	FD	60	7½x2½x	C
13	.....B40-4	3½–4	4550	158	Op	.....	7000	8.25/20D	9.00/20	Her WXC3	6–4¼x4½	383	5.0	260	106–2800	7–2½x13¼	Y	Fu 5A380	5	Tim 56200	BF	H	5.7–7.4	TWH	41H			342	578	a	FD	72	9½x3x	C
14	.....B50-4	4–5	4875	158	Op	.....	7895	9.00/20D	9.75/20	Her WXC3	6–4¼x4½	383	5.0	260	106–2800	7–2½x13¼	Y	Fu 5A380	5	Tim 58200	BF	H	6.8–7.8	TWH	41H			384	785	a	FD	72	9½x3x	C
15	.....B60-4	5–6	6500	161	Op	.....	8785	9.00/20D	9.75/20	Her RXB	6–4½x5¼	501	4.5	330	110–2200	7–3x14	Y	Fu 5A530	5	Wis 72000	2F	H	5.61–7.27	Own-Wis	41H			461	785	a	FD	72	9½x3x¼	C
16	.....B70-4	6–7	8895	161	Op	.....	9880	9.75/20D	9.75/22	Her RXB	6–4½x5¼	501	4.5	330	110–2200	7–3x14	Y	Fu 5A530	5	Wis 1337	2F	H	7.27–8.59	Own-Wis	41A			738	975	a	FD	72	10 x3x	C
17	.....B80-4	7–9	9750	161	Op	.....	10420	10.50/20D	10.50/22	Her RXC	6–4¾x5¼	529	4.9	350	114–2200	7–3x14	Y	Fu 5A530	5	Wis 1737	2F	H	7.14–9.15	Own-Wis	41A			738	975	a	FD	72	10 x3x	C
18	.....TH415-4	7–9	11875	180	Op	.....	12500	10.50/20D	10.50/22	Her HXB	6–5x6	707	4.5	455	148–2000	7–3½x17	Y	BL 7341	4	Wis 1737	2F	H	7.14–9.15	Own-Wis	41A			738	975	a	FD	84	8½x3x	P
19	.....TH420-4	8–10	12750	180	Op	.....	13750	10.50/20D	10.50/24	Her HXD	6–5½x6	855	4.5	555	180–2000	7–3½x17	Y	BL 7341	4	Wis 1910	2F	H	7.95–10	Own-Wis	41A			738	975	a	FD	84	10x3x	P
20	(D) BD30-4	3–3½	4425	143	Op	.....	5615	7.50/20D	8.25/20	Her DJXB	6–3 x4½	250	...	180	78–2600	7–3x13¼	Y	Fu 5A29	5	Tim 54200	BF	H	5.8–6.8	TWH	41H			281	527	a	TX	60	7½x2½x	C
21	(D) BD70-4	6–7	11350	161	Op	.....	10775	9.75/20D	9.75/22	Her DRXB	6–4½x5¼	474	...	350	124–2200	7–3x13¼	Y	Fu 5A530	5	Wis 1337	2F	H	7.27–8.59	Own-Wis	41A			738	975	a	FD	72	10 x3x	C
22	(D) .. BD80-4	7–9	12150	161	Op	.....	11315	10.50/20D	10.50/22	Her DRXB	6–4¾x5¼	474	...	350	124–2200	7–3x13¼	Y	Fu 5A530	5	Wis 1737	2F	H	7.14–9.15	Own-Wis	41A			738	975	a	FD	72	10 x3x	C
23	(D) .. THD415-4	7–9	14400	180	Op	.....	13300	10.50/20D	10.50/22	Her DHXB	6–5x6	707	...	530	176–1800	7–3½x17	Y	BL 7341	4	Wis 1737	2F	H	7.14–9.15	Own-Wis	41A			738	975	a	FD	84	8½x3x	P
24	(D) .. THD420-4	8–10	15100	180	Op	.....	14500	10.50/20D	10.50/24	Her DHXB	6–5x6	707	...	530	176–1800	7–3½x17	Y	BL 7341	4	Wis 1910	2F	H	7.95–10	Own-Wis	41A			738	975	a	FD	84	10x3x	P
25	Oshkosh.... WLD	3–3½	4885	146	201	18500	6900	9.75/20S	11.25/20	Her WXC3	6–4¼x4½	383	4.7	265	106–2800	7–2½x13¼	Y	Fu 5-A-380	5	Own WLD	2F	H	5.0–8.1	Own WLD	L4IH			592	975	G	TX	82	7x3x¼	T
26	.....WLX	3–3½	4490	146	201	18300	6700	9.75/20S	11.25/20	Her WXC2	6–4½x4½	360	4.7	245	106–2800	7–2½x13¼	Y	Fu 5-A-380	5	Own WLX	2F	H	5.0–8.1	Own WLX	L4IH			592	975	G	TX	82	7x3x¼	T
27	.....JCB	2	2885	153	181	11000	5420	7.00/20D	9.00/20S	Her JXC	6–3¾x4¼	282	5.3	176	73–2800	7–2½x10 H	N	Fu 5B29	10	Own JCB	F	H	5.1–6.6	Own JCB	L4IH			280	450	a	TX	71	6x3½x¼	C
† 28	.....JD	3	3490	153	181	13800	5610	7.50/20D	9.00/20S	Her JXD	6–4x4¼	320	5.3	204	84–2800	7–2½x10 H	N	Fu 5B29X	10	Own JD	F	H	5.8–6.8	Own JD	L4IH			335	578	a	TX	71	6x3½x¼	C
29	.....FC-35	5–6	6485	146	165	25000	9500	11.25/20S	11.25/20	Her RXBO	6–4½x5¼	500	5.4	360	121–2200	7–3x12½	Y	Fu 5A530X	5	Own FC35	2F	H	5.2–7.6	Own FC35	L4IH			650	975	G	TX	82	7x3x½	C
30	.....FB-35	6–7	6850	146	165	28000	10300	10.50/20D	11.25/20	Her RXCO	6–4¾x5¼	529	5.4	380	128–2200	7–3x12½	Y	Fu 5A530X	10	Own FB35	2F	H	5.2–7.6	Own FB35	L4IH			650	975	G	TX	82	8x3x½	C
† 31	.....B3S	3½–4	4960	146	165	21500	8250	10.50/20S	11.25/20	Her WXC3	6–4¼x4½	383	4.7	265	106–2800	7–2½x13¼	Y	Fu 5-A-380	5	Own B3S	8F	H	5.5–7.8	Own B3S	L4IH			516	867	G	TX	82	7x3x½	TL
† 32	.....B3D	3½x4	5490	146	165	21800	8500	10.50/20S	11.25/20	Her WXC3	6–4¼x4½	383	4.7	265	106–2800	7–2½x13¼	Y	Fu 5-A-380	5	Own B3D	2F	H	5.0–8.4	Own B3D	L4IH			650	975	G	TX	82	7x3x½	TL
† 33	.....C3S	4–5	5460	146	165	23000	8700	11.25/20S	11.25/20	Her YXC2	6–4½x4¾	453	4.4	297	99–2200	7–3x15	Y	Fu 5-A-530	5	Own C3S	8F	H	5.5–7.8	Own C3S	L4IH			516	867	G	TX	82	7x3x½	TL
34	.....C3D	4–5	5945	146	165	23000	8900	11.25/20S	11.25/20	Her YXC2	6–4½x4¾	453	4.4	297	99–2200	7–3x15	Y	Fu 5-A-530	5	Own C3D	2F	H	5.0–8.4	Own C3D	L4IH			650	975	G	TX	82	7x3x½	TL
35	.....R3S	5	5980	146	165	23000	8800	11.25/20S	11.25/20	Her RXB	6–4½x5¼	500	4.9	330	106–2000	7–3x12½	Y	Fu 5-A-530	5	Own R3S	8F	H	5.5–7.8	Own R3S	L4IH			516	867	G	TX	82	7x3x½	TL
36	.....FD	6–7½	7350	146	165	30000	11500	10.50/20D	12.00/20	Her RXCO	6–4¾x5¼	529	5.4	350	128–2200	7–3x12½	Y	Fu 5-A-530	5	Own FD	2F	H	6.3–9.1	Own FD	L4IH			650	975	G	TX	82	8x3x½	TL
37	.....BG3	7¼–10	8900	168	178	37000	13200	10.50/24D	13.50/20	Her HXB	6–5x6	707	4.5	455	148–2000	7–3½x17	Y	BL 7341	4	Own BG3	2F	H	6.3–9.1	Own BG3	B4IMV			666	975	G	TX	85	10x3¼x1½	L
38	.....GD	10	10200	168	178	38000	14200	13.50/20S	13.50/20	Her HXE	6–5¼x6	935	4.5	610	198–2000	7–3½x17	Y	BL 7341	4	Own GD	2F	H	7.16–10.0	Own GD	B4IMV			666	975	G	TX	85	10x3¼x1½	L
39	Walter..... FND	2½–3½	4600	126	150	16000	7000	9.75/20S	10.50/20S	Own 6MK	6–4¼x4¾	381	6.5	240	85–2500	7–2½x12½	Y	Own FN	5	Own FN	2D	H	6.1–8.1	Own FN	O4FXM	440	560	G	TX	84	7x2¾x¼	V
40	.....FQS	3–5	5000	138	150	20000	8000	9.00/20D	9.75/20	Own 6-110	6–4x4¾	358	5.2	250	110–2800	7–2¼x12½	Y	Own FN	5	Own FQ	2D	H	6.1–8.1	Own FN	O4FIM	336	500	G	TX	84	9x2½x¼	D
41	.....FJS	4–6	6000	138	150	23000	9000	9.75/20D	10.50/2	Own 6-125	6–4¾x5½	462	5.2	325	125–2500	7–3x13⅞	Y	Own FM	5	Own FJ	2D	H	6.1–8.1	Own FJ	O4FIM	336	500	G	TX	84	9x2½x¼	D
42	.....FMD	4–5	5500	126	150	20000	8000	9.20/20D	9.75/20	Own 6SRL	6–4¾x5½	462	5	320	110–2500	7–2½x12½	Y	Own FM	5	Own FM	2D	H	6.1–8.1	Own FM	O4FXM	440	560	G	TX	84	12x3½x¼	TL
43	.....FJMT	5	6000	114	...	24000	9000	9.75/20D	10.50/20	Own 6-125	6–4¾x5½	462	5.2	325	125–2500	7–3x13⅞	Y	Own FM	5	Own FJM	2D	H	6.1–8.1	Own FJ	O4FXM	730	1060	G	TX	72	12x3½x¼	TL
44	.....FKMD	5	6000	126	150	23000	9000	9.75/20D	10.50/20	Own 6SRK	6–4½x5½	517	5	345	120–2500	7–3x13⅞	Y	Own FM	5	Own FJM	2D	H	6.1–8.1	Own FJ	O4FXM	440	560	G	TX	84	12x3½x¼	TL
45	.....FCKD	5–6	6600	126	138	25000	10000	9.75/24D	10.50/24	Own 6SRK	6–4½x5½	517	5	345	120–2500	7–3x13⅞	Y	Own FC	5	Own FB	2D	H	7.1–10.1	Own FB	O4FXM	550	630	D	TX	84	13x3¾x¼	B
46	.....FCS	5–7	7200	138	162	27000	11000	9.75/24D	10.50/24	Own 6SRK	6–4¾x5½	517	5	345	120–2500	7–3x13⅞	Y	Own FC	5	Own FB	2D	H	7.1–10.1	Own FB	O4FXM	550	630	D	TX	96	14x3¾x¼	B
47	.....FBS	5–8	8000	138	162	30000	11000	10.50/24D	11.25/24	Own 6RB	6–5x5¾	677	5	460	150–2200	5–3½x10⅜	Y	Own FB	5	Own FB	2D	H	7.1–10.1	Own FB	O4FXM	550	630	D	TX	96	14x3¾x¼	B
48	.....FBRS	7–10	8600	138	162	35000	12000	11.25/24D	12.00/24	Own 6RB	6–5x5¾	677	5	460	150–2200	5–3½x10⅜	Y	Own FB	5	Own FBR	2D	H	7.1–10.1	Own FB	O4FXM	800	1160	D	TX	96	14x3¾x¼	B
Six-Wheelers Wheels Driven ▼																																		
49	(a) A't'car 6RH	2C 7–9	3600	174	192	.....	9456	8.25/20D	9.00/20	Own 358	6–4¾x4¾	358	5.5	250	85–2400	7–3x12½	Y	Own DF5	5	Own B	2F	H	7.20–10.4	Tim 33000	LO4IDV	519	832	c	2I	84½	8x3x¼	T
50	.....(7) 6D	2C 7–9	3900	174	192	.....	9545	8.25/20D	9.00/20	Own 358	6–4x4⅜	358	5.5	250	85–2300	7–3x12½	Y	Own DF5	5	Own B	2F	H	7.20–10.4	Tim 33000	LO4IDV	519	832	c	2I	84½	8x3x¼	T
51	.....6DF	2C 6½–11	3950	159	177	.....	9752	8.25/20D	9.00/22	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12½	Y	Own DF5	5	Own B	2F	H	7.20–10.4	Tim 35000	LO4IDV	519	832	c	2I	84½	8x3x¼	T
52	.....6N	2C 9–10½	4625	178	213	.....	11487	9.00/20D	9.00/22	Own 404	6–4¼x4¾	404	5.5	295	97–2200	7–3x14½	Y	Own DF5	5	Own C	2F	H	5.18–10.4	Tim 35000	LO4IDV	519	832	c	FD	102½	9x3x¼	T
53	.....6NF	2C 10–12½	5175	178	213	.....	12019	9.00/22D	9.75/22	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Own TF5	5	Own C	2F	H	5.40–10.4	Tim 26450	LO4IDV	543	931	c	FD	102½	9x3x¼	T
54	.....6T	2C 10½–12	6250	203	217	.....	13233	9.75/20D	9.75/22	Own 501	6–4½x5¼	501	5.5	375	123–2200	7–3¼x14 H	Y	Own TF5	5	Own CG	2F	H	7.69–8.52	Tim 26450	TO4IA	543	931	c	FD	128	10½x3x	T
55	.....6TF	2C 15–20	7500	210	223	.....	14567	10.50/24D	11.25/24	Wau 6RB	6–5x5¾	677	4.7	461	125–1800	4–3½x11¼	Y	BL 7351	5	Own CGA	2F	H	7.69–8.52	Tim 27450	TO4IA	659	1051	c	FD	125	10½x3x	T
56	e.u.s. 6UD	2C 6½–11½	4200	127	145	.....	10064	8.25/20D	9.00/22	Own 358	6–4x4¾	358	5.2	250	85–2300	7–3x12½	Y	Own DF5	5	Own B	2F	H	7.20–10.4	Tim 35000	LO4IDV	519	832	c	2I	102¼	8x3x¼	T
57	e.u.s. 6UN	2C 9–10½	4925	128	163	.....	12032	9.00/20D	9.00/22	Own 404	6–4¼x4¾	404	5.5	295	97–2300	7–3x14½	Y	Own DF5	5	Own C	2F	H	5.18–10.4	Tim 26450	LO4IDV	543	931	c	FD	103¼	9x3x¼	T
58	e.u.s. 6UNF	2C 10–12½	5250	128	163	.....	12292	9.00/22D	9.75/22	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Own TF5	5	Own C	2F	H	5.40–10.4	Tim 26450	LO4IDV	543	931	c	FD	103¼	9x3x¼	T
59	e.u.s. 6UT	2C 11–12½	6300	145	163	.....	13473	9.75/20D	9.75/22	Own 501	6–4½x5¼	501	5.5	375	123–2200	7–3¼x14 H	Y	Own TF5	5	Own CG	2F	H	7.69–8.52	Tim 26450	TO4IA	543	931	c	FD	120¼	10½x3x	T
60	Bro'kway 180XSBT	5–7	4350	195	207	.....	9800	8.25/20D	9.00/22	Con 32B	6–4½x4¾	361	5.4	252	95–2500	7–2½x13	Y	Fu 5A38	5	Tim 2518SBT	8F	R	5.57–6.83	Shu 15695B1	L6IHV	708	1224	a	CD	125	8¼x3x¾	B
61	.180XSBT Spec.	5–7	4950	195	207	.....	10270	8.25/20D	9.00/22	Con 34B	6–4¾x4½	427	4.2	308	118–2600	7–2¾x13	Y	Fu 5A53	5	Tim 2518SBT	8F	R	5.57–6.83	Shu 15695B1	L6IHV	708	1224	a	CD	125	8¼x3x¾	B
† 62	Corbitt. 16SB2	2C 2½–4	2000	175	200	.....	5300	7.50/20D	7.50/20	Wau 6BK	6–3¾x4¼	282	5.4	190	80–2800	7–2½x10¼	N	Cla B116	4	Tim 8BT75	8F	R	5.14–6.6	Tim 30020H	L6IHV	382	608	a	TX	Opt	7x3½x¼	T
† 63	.....24SB2	2C 4–6	3750	175	200	.....	7670	8.25/20D	8.25/20	Wau 6MK	6–4½x4¾	381	4.8	240	85–2400	7–2½x12½	N	Fu 5A380	5	Tim 8BT151	8F	R	5.8–6.8	Tim 33000H	L6IHV	544	930	a	TD	Opt	8x3½x¼	T
† 64	.....30SB2	2C 6–8	4800	190	225	.....	9100	9.00/20D	9.00/20	Wau 6SRL	6–4¾x5½	462	4.5	300	100–2200	7–3x13⅞	N	Fu 5A530	5	Tim 8BT251	8F	R	5.28–7.4	Tim 33000H	L6IHV	636	1096	a	TD	Opt	8x3½x¼	T
† 65	.....36SD2	2C 8–10	5800	190	225	.....	10700	9.75/20D	9.75/20	Wau 6-125	6–4¾x5½	462	5.2	330	125–2500	7–3x13⅞	N	Fu 5A530	5	Tim 8DT320	2F	R	5.56–7.8	Tim 35000H	L6IA	918	1306	a	TD	Opt	8x3½x¼	T
† 66	.....18SD4	2½–4	3950	Op	Op	.....	5800	6.50/20D	7.50/20	Wau 6MK	6–4¼x4¾	381	4.8	240	85–2400	7–2½x12½	N	Fu 5A380	5	Tim SD75	w/2	R	5.14–6.6	Tim 33000H	L6IHV	396	678	a	TX	Opt	7x3½x¼	T
† 67	.....26SD4	4–6	5720	Op	Op	.....	9000	7.50/20D	9.00/20	Wau 6MZ	6–4¼x4¾	404	6.0	274	90–2400	7–2¾x12½	N	Fu 5A380	5	Tim SD151	w/2	R	5.28–7.4	Tim 33000H	L6IHV	574	930	a	TX	Opt	8x3½x¼	T
† 68	.....33SD4	6–8	6830	Op	Op	.....	10000	8.25/20D	9.75/20	Wau 6SRL	6–4¾x5½	462	4.5	300	100–2200	7–3x13⅞	N	Fu 5A530	5	Tim SD251	w/2	R	5.56–7.8	Tim 35000H	L6IHV	636	1096	a	TD	Opt	8x3½x¼	T
† 69	.....40SD4	8–10	8800	Op	Op	.....	11500	9.00/20D	10.50/22	Wau 6SRK	6–4½x5½	517	4.6	330	110–2200	7–3x13⅞	N	Fu 5A530	5	Tim SD320	w/2	R	6.85–9.41	Tim36000TW	Ws6IA	824	1306	a	TD	Opt	8x3½x¼	T
† 70	.....54SD4	10–15	11000	Op	Op	.....	13000	9.75/20D	11.25/22	Wau 6-125	6–4¾x5½	462	5.2	330	125–2500	7–3x13⅞	N	Fu 5A530	5	Tim SD420	w/2	R	7.92–9.98	Tim27450TW	Ws6IA	964	1516	a	TD	Opt	12¼x3¼x	T
† 71	.....18SD6	2½–4	5500	Op	Op	.....	7300	6.50/20D	7.50/20	Wau 6MZ	6–4¼x4¾	404	6.0	274	90–2400	7–2¾x12½	N	Fu 5A380	5	Tim SD75	2F	R	5.14–6.6	Wis F75AB	L6IHV	396	678	a	TX	Opt	8x3½x¼	T
† 72	.....26SD6	4–6	7500	Op	Op	.....	8200	7.50/20D	9.00/20	Wau 6SRK	6–4¾x5½	462	4.5	300	100–2200	7–3x13¾	N	Fu 5A530	5	Tim SD151	2F	R	5.28–7.4	Wis F211	Ws6IA	638	1139	a	TD	Opt	8x3½x¼	T
† 73	.....40SD6	6–8	8900	Op	Op	.....	11700	8.25/20D	9.75/20	Wau 6RB	6–5x5¾	677	4.4	440	125–1800	4–3½x11¼	N	Fu MHU	4	Tim SD251	2F	R	5.56–7.8	Wis F211	Ws6IA	852	1305	a	TD	Opt	8x3½x¼	T
† 74	.....54SD6	8–10	12300	Op	Op	.....	14600	9.00/20D	11.25/22	Wau 6RB	6–5x5¾	677	4.4	440	125–1800	4–3½x11¼	N	Fu MHU	4	Tim SD320	2F	R	6.85–9.41	Wis F311	Ws6IA	1064	1625	a	TD	Opt	12¼x3¼x	T
† 75	.....54SD6	6 10–15	16900	Op	Op	.....	15400	9.75/22D	10.50/22	Her HXC	6–5¼x6	779	4.5	508	164–2000	7–3½x17	N	BL 734	4	Tim SD420W	2F	R	7.92–9.98	Wis F311W	Ws6IA	1064	1625	a	TD	Opt	12¼x3¼x	T

† 76	Day-Elder 151T	3	1695	156	199	15000	5300	6.00/20D	8.25/20	Her JXB	6–3¾x4¼	263	4.4	164	68–2800	7–2½x10 H	Y	WG T9	4	Tim6SBT76H	BF	H	4.56–6.6	Tim 30000H	L6IHV	423	606	a	KF	77½	7x3½x¼	C
† 77	.....211T	4	2175	156	199	21000	6400	8.25/20	32x6	Her JXC	6–3¾x4¼	282	4.4	176	73–2800	7–2½x10 H	Y	WG T9	4	Tim 8BT151H	BF	H	4.44–7.4	Tim 31000H	L6IHV	636	1094	a	DF	104½	9x3½x¼	C
† 78	.....		2215				6410	8.25/20	32x6	Her WXC	6–4x4¼	339	4.7	234	94–2800	7–2¾x13¼	Y	Fu MHU	4	Tim 8BT251H	BF	H	4.55–7.8	Tim 33000H	L6IHV	636	1094	a	DF	118½	9x3½x¼	C

| | | |

Complete Truck Specifications Table Is Published Every Other Month

Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANS-MISSION Make and Model	Forward Spd's	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C.A Dimension (Std. W. B.)	Side Rail Dimensions	FRAME Type
1	Ward (D) 440TC	15	11 000	240	246	44000	14000	9.75/22D	10.50/20	Cu. Die. HA	6–4½x6	672	12. 9	420	125–1800	7–3¼x16½	Y	BL 7351	5	Tim 8DT420w	WF	R	5. 64–10. 2	Tim27452TW	W6IA	1012	1514	a	TD	148¼	14x3¼x¼	T
2	LaFt. 440TR	15	9350	240	246	44000	13700	9.75/22D	9.00/20	Wau RK	6–3½x4¼	677	5. 5	465	145–2000	4–3¼x11½	Y	BL 7351	5	Tim 8DT420w	WF	R	5. 0–9. 25	Tim27452TW	W6IA	1012	1514	a	TD	148¼	14x3¼x¼	T
3	 340	12½	4490	204	230	28000	9200	8.25/20D	10.50/20	Wau 4K	6–4½x5½	381	4. 6	242	85–2500	7–3¼x12½	Y	BL 5351	5	Tim 35000H	SF	T	5. 4–9. 25	Tim 35000H	L41HV	651	1088	a	TD	115	12x3¼x¼	T
4	..... 440TS	12	7100	203	241	40000	13000	9.75/20D	10.50/20	Wau 6-125	6–4½x5½	462	4. 6	324	125–2600	7–3x13½	Y	BL 5351	5	Tim SWT320w	WF	R	5. 64–10. 2	Tim26450TW	W6IA	902	1514	a	TD	116¼	14x3¼x¼	T
5	Wht 630SW 320 WAR	9–11	(6a)	193	205	....	10000	9.00/20D	9.75/20	Own 7A	6–4¼x5¼	434	4. 9	285	107–2400	7–2¼x13¼	Y	Own 4B	5	Tim8W320W	WF	R	6. 00–9. 25	Own 61D	W6IA	795	1192	a	CI	109¼	8½x3x¼	C
6	..6438W 420 4R	12–14	(6a)	198	215	....	14400	40x8D	9.75/24	Own 5A	6–4½x5¼	580	4. 6	355	130–2300	7–3x15¼	Y	Own 10B	4	Tim8W420W	WF	R	6. 80–10. 2	Own 12D	W6IA	833	1286	a	CI	109¼	8½x3x¼	C
Electrics																															
7	Brockway 50-E	1–1½	1380	91	Op	....	2450	32x6S	32x6	GE Elec	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tim 53200H	SF	H	.....	Tim 30000H	L41H	248	380	a	CD	.....	5x6	CD
8	.....50-E-1	1	1500	91	112	....	2850	30x5S	32x6	GE Elec	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tim 53200H	SF	H	.....	Tim 30000H	L41H	248	380	a	CD	.....	5x6	CD
9	.....125-E	2–3	2400	136	Op	....	4800	8.25/20D	9.75/20	West Elec	.....	.....	.....	.....	.....	.....	.....	.....	.....	Tim 54300H	SF	H	.....	Tim 31000H	L41H	365	578	a	CD	100½	7½x2½x¼	C
10	.....140-E	3–4	3200	146	Op	....	6700	9.75/20D	10.50/20	West Elec	.....	.....	.....	.....	.....	.....	.....	.....	.....	W'ls 5000L	2F	H	.....	Shu 15685B1	L41H	365	578	a	CD	112½	7½x3¼x¼	C
11	.....170-E	5–6	4200	148	Op	....	8040	9.75/20D	10.50/20	West Elec	.....	.....	.....	.....	.....	.....	.....	.....	.....	W'ls 72000L	2F	H	.....	Shu 15685B1	L41H	407	663	a	CD	112½	8½x3¼x¼	C
12	.....195-E	6–7	4200	160	Op	....	8040	9.75/20D	10.50/20	West Elec	.....	.....	.....	.....	.....	.....	.....	.....	.....	W'ls 13378H	2F	H	.....	Shu 15685B1	L41H	500	772	a	CD	124½	8¼x3½x¼	C
13	Walker 400-LA	1–1½	1380	95	Op	....	2350	32x6S	.....	Own Elec.	.....	.....	.....	.....	.....	.....	.....	.....	.....	Own	F	H	.....	Cla	B41M	214	308	a	41	36	4x2x¼	CD
14	405	1	1450	116	Op	....	2800	32x6S	.....	Own Elec.	.....	.....	.....	.....	.....	.....	.....	.....	.....	Own	F	H	.....	Cla	B41M	214	308	a	41	75	4x2x¼	CD
15	.....405-LA	1	1525	116	Op	....	2600	32x6S	.....	Own Elec.	.....	.....	.....	.....	.....	.....	.....	.....	.....	Own	F	H	.....	Cla	B41M	214	308	a	41	67	4x2x¼	CD
16	420	1½–2	1800	116	Op	....	3600	32x6D	.....	Own Elec.	.....	.....	.....	.....	.....	.....	.....	.....	.....	Own	2F	H	.....	Tim	B41M	242	344	a	41	74	5x2x¼	CP
17	425	2½	2400	126	Op	....	4700	32x6D	.....	Own Elec.	.....	.....	.....	.....	.....	.....	.....	.....	.....	Own	2F	H	.....	Tim	B41M	396	571	a	41	90	5x2x¼	P
18	 430	3	2500	126	Op	....	5300	34x7D	.....	Own Elec.	.....	.....	.....	.....	.....	.....	.....	.....	.....	Own	2F	H	.....	Tim	B41M	470	678	a	41	109	6x2x¼	P
19	 440	4	3400	145	Op	....	6300	36x8D	.....	Own Elec.	.....	.....	.....	.....	.....	.....	.....	.....	.....	Own	2F	H	.....	Tim	B41M	470	678	a	41	124	7x3x¼	P
20	 450	5–6	3650	160	Op	....	7000	38x9D	.....	Own Elec.	.....	.....	.....	.....	.....	.....	.....	.....	.....	Own	2F	H	.....	Tim	B41M	520	748	a	41	136	7x3x¼	P
21	 480	6–7	5650	162	162	....	7600	10.50/20D	.....	Own Elec.	.....	.....	.....	.....	.....	.....	.....	.....	.....	Own	2F	H	.....	Tim	B41M	520	748	a	41	136	7x3x¼	P
Mack Jr. Specifications																															
22	Mack. Jr. 1M	1½	535	118	....	....	2250	6.00/16S	6.50/16S	MR309	6–3¾x4½	209	5. 4	144	72–3000	4–2¼x5½	N	MR8S	3	MR45	S½	H	4. 27–4. 9	MR1	L41H	170	....	C	TX	25½	6x2½x½	C
23	..... 10M	1½	665	139	190	....	3400	6.00/20D	7.50/20D	MR209	6–3¾x4½	209	5. 4	144	72–3000	4–2¼x5½	N	MR1B	4	MR115	SF	H	5. 28–6. 6	MR10	L41H	295	....	C	TX	57½	7½x2½x½	C
24	..... 20M	1½–2	1025	149	190	....	3800	6.50/20D	8.25/20D	MR228	6–3¾x5	225	5. 4	150	74–3000	7–2½x10½	N	MR1D	4	MR115	SF	H	5. 28–6. 6	MR20	L41H	295	....	C	TX	57½	7½x2½x½	C
25	..... 30M	2–3	1375	150	190	....	3900	7.00/20D	8.25/20D	MR268	6–3¾x5	268	5. 5	175	85–3000	7–2½x10½	N	MR2B	4	MR135	SF	H	5. 28–6. 6	MR30	L41HV	350	....	C	TX	84½	7½x3¼x¼	C
26	(a) (c.b.c.) 30MT	2–3							8.25/20D	MR268	6–3¾x5	268	5. 5	175	85–3000	7–2½x10½	N	MR2B	4	MR135	SF	H	5. 28–6. 6	MR30	L41HV	350	....	C	TX	84½	7½x3¼x¼	C

♦ Denotes New Models or Change in Specifications.

† Rear 32 x 6 S

Truck Drivers Are Tops

(CONTINUED FROM PAGE 17)

officer of speeding on Woodward Avenue at 44 m.p.h. "What do you plead?" asked the Judge. "Not guilty, Your Honor," the defendant answered. The officer is sworn in and testifies that he clocked the truck at 44 after trailing it for four blocks. Surely an open and shut case in any court.

But hold on. The driver's boss takes time out from his job to testify in the driver's behalf. He testifies that this truck is one of a fleet of 300 vehicles, inspected daily as to mechanical condition, and maintained in good order. Each truck is equipped with a governor adjusted for a maximum vehicle speed at least 15 miles below the alleged speed. Further questioning by the Judge develops the point that all governors are sealed, that the seals are inspected daily, and that the governor adjustment can't be fooled with unless the seal is broken.

The Court investigates, weighs the evidence—"Case dismissed," says Judge Maher. The Court, as we said before, is kindly and human. "Officers make mistakes sometimes, just as we all do," he confided.

NOW look at another picture. Here is a truck driver who has spent several hours in custody and was released upon posting a personal bond of $12. "You're accused of driving a truck with a defective windshield. Is that true?" "Yes, Your Honor." "How do you feel about it? Do you think you should pay the fine?" "No, sir; I drive the truck for a private concern and have nothing to do with its upkeep." "I agree with you," said the Judge, "and if there is any fine to be paid, your boss will pay it. Dismissed. Call at the desk for your $12."

Not only Judge Maher but Duncan Moore and other WJR executives say with one accord that the professional drivers are the best drivers on the streets today. The Judge goes out of his way to compliment the fleetmen for the way they have been handling the safety problem and particularly for their loyalty in appearing in court in the behalf of their drivers.

As to further advice to fleetmen concerning their safety programs, the Judge has no suggestions to make. Truck drivers constitute only a small percentage of the cases brought to his attention and their record is clear so far as he is concerned. All he has to say is, "Keep up the good work."

Ford to Build New Glass Plant

Construction of a continuous glass melting furnace at the Rouge plant, Dearborn, is planned by the Ford Motor Co. The furnace may cost a half million dollars.

Test of Oil is Engine Wear

(CONTINUED FROM PAGE 15)

in number one and two cylinders is always greater than the wear in numbers five and six of these engines. The heat factor enters here and definitely shows where the water enters the block and the manner in which it is distributed. We would much prefer to measure our wear against thousands of feet of piston travel instead of thousands of vehicle miles but we were unable to develop an accurate engine revolution counter that would stand up to the excessive requirements of city operation where gear shifting and acceleration play such an important part.

The study of cylinder wear is tied up so closely with maintenance that it has resulted in definitely prolonging our engine life. The selection of iron alloys during the past few years, with increasingly superior wear characteristics, has provided us with improved dry sleeves that in one aggravated case represented five times greater life.

SOME pertinent facts regarding oils became apparent in studying engines after prolonged tests. We once considered the two principal purposes of engine lubrication were the reduction of friction and the prevention of blow-by. We now feel that a third is equally important, namely the dissipation of heat. Much help can be rendered to the oil in the crankcase in performing this important function but in many designs it has been entirely overlooked. Cooling fins on engine oil pans are used by some manufacturers but few have recognized the good to be derived in oil temperature reduction from husky main bearing webbs. This method, too, would stiffen many crankcases that are in some cases hardly fit for the rigorous service they are asked to perform.

The reduction of friction in an engine by the proper selection of oil viscosity has not been thoroughly understood by many operators in the past. Too heavy lubricants have been used. "Thin film" lubrication does not depend upon viscosity but upon what is sometimes called "oiliness" or the ability of the oil to deposit a film on the bearing surfaces. Good oil consumption figures are never obtained from a poorly maintained engine.

The sludge of the old days has practically disappeared from all engines due to superior refining methods. However, it has been replaced by what is sometimes called sludge but what is really an emulsification. The reason we have emulsification in slow speed city operation is due largely to progress in design and the demand for increased engine horsepower.

ENGINE cooling systems designed for sustained speeds are of such dimensions and efficiency that slow speed operations cannot hope to maintain sufficiently high water temperatures to successfully combat excessive condensation without resorting to mechanical means. Water jacket temperatures of 160 deg. or less without adequate crankcase ventilation and modern heat control devices invite emulsification. We have found cases and have received reports of others that indicate an average water accumulation in certain crankcases of at least 50 per cent of the whole in less than 10,000 miles.

In such cases, unless the operator recognizes the source of the trouble, the refiner is put on the spot. In fact he has been on the spot so often, he has provided protection. Many refiners now have specially processed oils that successfully combat these conditions. Other remedies are available also that are easily applied and maintained such as thermostatically con-

"STURACO" ★★★★ EXTREME PRESSURE ("E.P.") GEAR AND CHASSIS LUBRICANTS

For Winter Operations

BY ALL MEANS

INSIST UPON

THE USE OF "STURACO"

BECAUSE its predetermined and uniform HIGH LOAD CARRYING CAPACITY will prevent costly gear and bearing failures due to shock loads resulting from slippage of wheels on icy roads.

Investigate at once this low cost "Insurance Policy" by writing for Bulletin No. 4.

"STURACO" E. P. LUBRICANTS ARE THE ORIGINAL DEVELOPMENT OF

D. A. STUART & CO.

ESTABLISHED 1865

GENERAL OFFICES, 2727-2753 SO. TROY ST. CHICAGO, U.S.A.

BRANCHES IN PRINCIPAL CITIES

trolled radiator shutters and water-absorbing oil filters.

The life of engine oil of good grade depends largely upon the operator himself. Based on past experience we are advocates of periodic engine inspections spaced sufficiently wide to maintain piston rings, pistons, valves, and carburetors in such condition that the full benefit of inherently long life characteristics of good engine oil may be received.

PISTON rings no matter how carefully made or how intelligently the materials have been selected cannot hope to remain in an engine indefinitely. Wear or clogging requires that they be replaced according to the service within a specified time. The time limit of his fleet should be well known to every operator and inspection so spaced as to assure the replacement of piston rings before blow-by has ruined the crankcase oil that normally would remain clean and retain its body for thousands of car miles. During this inspection pistons and bearings should be inspected and faults corrected if necessary. Valves, too, should be touched up to assure proper seating.

The carburetor should be removed and receive a thorough cleaning and check for wear and flow. If it has received normal usage new jets will be required for the effect of drawing approximately 8,000 gal. of gasoline through them has perceptibly increased their size.

This scheme, we think, is good business for in conjunction with efficient filters, oil life can be easily extended to 12,000 to 15,000 miles and perhaps further. Also major unit replacements according to their respective lives and in accordance with individual preventive maintenance schemes can be made at these periods.

WHILE expressing a profound respect for the vast amount of research work that has been done in connection with lubricants, Mr. F. L. Faulkner, Automotive Engineer, Armour and Co., in a paper read at the annual meeting of the Society of Automotive Engineers in Detroit, presented an accurate picture of the dilemma into which fleet operators have been placed by the lack of standardized specifications which would give them a true picture of what they may expect from lubricants in service.

Mr. Faulkner is particularly well qualified to present the fleet operators' views on the availability of useful information on lubricants. His fleet is large and scattered and the operation of this fleet gives him a varied experience in different types of fleet operation. In addition he has a large amount of test equipment at his disposal. In presenting the fleet operators' case he drew freely upon his own experience and experiments.

Quoting directly from Mr. Faulkner's paper, "We, the operators, as purchasers are placed in a peculiar position when we are confronted constantly on this engine oil matter with problems bordering on a research character. I have stated before that operators do not desire to design automotive equipment. Neither do we desire to do research work on, or write specifications on, lubricating oils. All that we want and all that we are asking for are definite standards for comparative purposes both on new oils to be purchased and the old oil drained from service."

LATER in the paper Mr. Faulkner said, "Too much emphasis has been placed in the past on meeting certain conventional specifications and too little fact has been translated into workable information for the use of the fleet operator.

"I have touched briefly on the question, when is an oil unfit for further

"HOOF GOVERNORS ONE OF OUR BEST INVESTMENTS"

says W. P. STOKE, Wichita Falls Ice Co.

"On our Chevrolet trucks," Mr. Stoke reported, "our gas mileage has been increased from nine to eleven miles per gallon; on our Fords, from ten to twelve; and on our Dodge from eleven to fourteen. Oil consumption has decreased 35% with an approximate decrease of 40% in repairs and maintenance expense. The average for a truck was 800 miles without some sort of repair before installing Hoof Governors; now this has been practically doubled."

If you own, operate or drive a car or a fleet, it will pay you to investigate the advantages of Hoof Governors ... standard equipment upon hundreds of national fleets.

HOOF PRODUCTS COMPANY
162 NO. FRANKLIN STREET
CHICAGO, ILLINOIS

Hoof Products Company manufacture industrial governors, too. If you require governors on stationary engines that require close regulation, this type of equipment can be supplied on special order to meet the most exacting requirements.

use? There seemingly is less agreement on this question than on the requirements of a new oil. However, to the operator this is the all important question. We really are not as much concerned with what the specification of a new oil is that goes into the crankcase, as we are what goes on in the engine during the use of the oil and the time that oil should be removed from the engine to prevent internal damage."

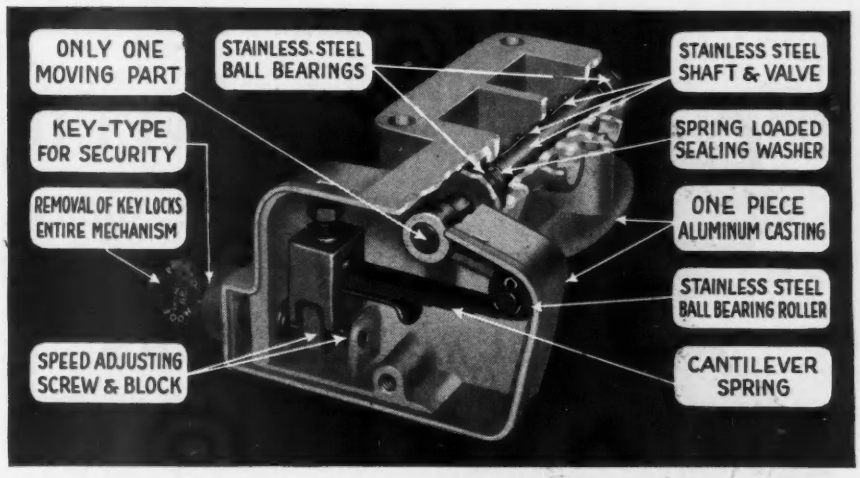
IN discussing Mr. Faulkner's paper, T. C. Smith of the A. T. & T., who was chairman of the meeting, pointed out that there are a number of fundamental questions that should be answered. Among these he listed the need for some standardized test to determine acidity and a standard test for oxidation. At present there are quite a few different tests and no correlation among them.

L. V. Newton, Automotive Engineer, Byllesby Engineering & Management Corp., pointed out that the real importance of lubricants is the protection that they offer to the wearing parts of the vehicle. In other words, the cost of material is low but the cost of replacing worn parts certainly can be very high. In his operations the cost of lubricants in the smallest item although the labor involved is fairly high. Since the life of wearing parts is most important, Mr. Newton recommends the use of special lubricants wherever necessary and as many grades as may be needed. He also recommends low viscosity oils and finds that the best compromise is a lubricant which has a low enough viscosity to develop maximum power in the engine.

M.C. Horine, of Mack, commented on the fact that the complication of the lubrication requirements is a product of practical conditions and can be justified on economic grounds. He believes that ideal standards or specifications will never be possible and consequently simplification very difficult because motor vehicle design is not static and because vehicles are constantly being improved and changed.

D. P. BARNARD, Director of Research, Standard Oil Co. of Indiana, cited some comprehensive research work carried on by his company recently which indicates that over a long period of time the low viscosity crankcase lubricants are the most economical. They tried two types of lubricants in a fleet of new cars. One type was of high enough viscosity to give maximum oil economy at the start, the other type was a very low viscosity oil which was consumed much faster. However, over a long period of mileage the engine which was started on the heavy oil showed considerable wear and the oil economy rapidly went down with use until eventually they had to get rid of the vehicles. The cars that were started on light oils have been operated continuously and are still in operation and the oil economy today is almost as good as it was at the beginning.

Both W. J. Cumming of Surface Transportation Co., New York City, and Capt. G. E. Gray, manager of automotive division of Shell Eastern Petroleum, indicated that a great deal of work on their part has proved to their satisfaction that the apparent sludge developed with the new type of crankcase lubricants is really not sludge at all but an emulsion created by excessive condensation in the crankcase. They have found, after careful testing, that the jobs that operate at high speeds and in normal service do not develop this emulsion, whereas the vehicles that do considerable idling, stopping, starting, etc., do develop considerable condensation and emulsion products. Experiments with oil filters of the water absorbing type show that a filter of this type will reduce condensation in the crankcase.


ONLY ONE MOVING PART
STAINLESS STEEL BALL BEARINGS
STAINLESS STEEL SHAFT & VALVE
KEY-TYPE FOR SECURITY
SPRING LOADED SEALING WASHER
REMOVAL OF KEY LOCKS ENTIRE MECHANISM
ONE PIECE ALUMINUM CASTING
STAINLESS STEEL BALL BEARING ROLLER
SPEED ADJUSTING SCREW & BLOCK
CANTILEVER SPRING

"HOOF GOVERNORS Reduced Fleet Operating Cost"

Says F. J. Kesel, Union Transfer Co., Philadelphia

"You will be interested to know," he wrote, "that we are quite pleased with the performance of the Hoof Cantilever Spring Governor, which has reduced operation cost on our fleet . . . during the past year we have installed forty-eight (48) Key Type Cantilever Spring Governors which have performed entirely satisfactorily."

Their experience has been duplicated by hundreds of other fleet owners, who are using Hoof Key-Type and A.C.H. Seal-Type Governors exclusively. Write for facts, prices and specifications.

HOOF PRODUCTS COMPANY
162 NO. FRANKLIN ST. « » CHICAGO, ILL.

Hoof Products Company manufacture industrial governors, too. If you require governors on stationary engines that require close regulation, this type of equipment can be supplied on special order to meet the most exacting requirements.

Chevrolet 1936 Trucks

(CONTINUED FROM PAGE 37)

ment in fuel economy. Combustion chambers have been reshaped to attain smoothness with the higher compression.

THE balanced carburetor promotes fuel economy and easy starting. Air pressure in the float chamber is balanced with that inside the carburetor intake, to effect a constant ratio of air to gasoline in the fuel mixture and to offset the choking effect that gradually increases as the air cleaner becomes clogged with dust.

Major improvements have been made in the cooling system to maintain lower engine temperatures, and to control the engine oil temperature and cylinder block and valve push rod expansion. The chief change is the adoption of full-length water jackets, which extend nearly to the lower edge of the piston skirt at the bottom of the stroke. The rings thus come in contact only with a cylinder wall surface that is constantly cooled. Since the full depth of the cylinders is surrounded by water, the cylinders warm up evenly. Oil temperature runs 30 deg. cooler than formerly. The oil supplied to the valve rocker shaft is cooled by running the line through the cylinder block, where it is surrounded by water; this oil is further reduced in temperature by 10 deg.

FURTHER improvement in engine cooling has been made by changes in the radiator cores of both models. In the half-ton truck, the core is now made of copper, as on the 1½-ton truck core, which has greater heat conductivity. The core of the 1½-ton has been provided with enlarged area of air fin surface.

Generators are equipped with ventilators, which stabilize the temperature at about 80 deg. higher than that of the atmosphere.

Clutch improvements include the use of a new shot-blast process of treating the cushion springs of the disc, resulting in much greater durability, and a more accurate alignment of the clutch release levers.

The steering gear of both models has been improved by the adoption of a larger pitman shaft with longer bushings, and a larger pitman arm.

The front spring hanger of the 1½-ton truck now incorporates two safety stops, to limit the movement of the axle in case of spring breakage. These stops are heavy lugs on the hanger, allowing normal shackle movement but capable of taking the entire load should the main leaf of the spring break.

The fuel tank in the 1½-ton models with cabs is now mounted under the seat. The filler cap extends from the seat riser, so that it is not necessary to raise the seat cushion. Capacity has been increased to 18 gal.

An important development in bearing design marks the practice adopted by Chevrolet in the 1½-ton model full floating rear axle. The load at each wheel is carried on two self-aligning Hyatt roller bearings of entirely new type. Instead of plain rollers, the new bearing uses barrel-type rollers, the bearing surfaces being ground radially. The bearing surfaces of the inner and outer races also are ground radially, but on a greater radius. Under a light load, therefore, the contact between the surfaces of the roller and the races is slight. As the load increases, the elasticity of the material compresses the rollers and races so that a greater area of surface is brought into contact. In other words, the capacity increases as the load increases. Both radial and thrust loads are taken.

Wire wheels used on the half-ton trucks have been made stronger.

YOU NEED
This Great Safety Device on Your
TRUCKS
and
TRAILERS

Don't depend upon the costly and uncertain maintenance of vacuum or unreliable check valves to stop and to *hold* your trucks and trailers.

***The* ROBINSON**
AUTOMATIC BRAKE LOCK

. . . is a simple, effective, fool-proof, locking device that can be depended upon to *positively hold* your brakes *effectively* . . . *(regardless of how steep the grade or how heavy the load)* . . . until you are ready to release them.

Easy to apply . . . no change of present brake system necessary . . . the Robinson Lock is a small, but important investment in Safety and Surety that will pay for itself many times over.

Write today for illustrated details, prices and our TEN-DAY FREE TRIAL OFFER

AMERICAN DIE & TOOL CO.
READING, PENNA.

'The Berries' for Berries

(CONTINUED FROM PAGE 35)

about 15 cents a day for gasoline, while $1.50 a day should cover the cost of depreciation.

Now because we know that nothing mechanical can operate continually without showing some trouble, arrangements have been made all along the route for servicing the unit and preserving the health of its cargo. In fact, the cooling system has been so designed that if the loaded vehicle is held up for any service, it can be plugged in on any power socket and kept running until the trailer is on the road again under its own power.

The refrigeration unit weighs between 800 and 900 lb. complete. It consists of a 1½-hp. generator mounted at the tractor power plant, driven from the power take-off. Current is delivered through a heavy cable to a 1½-hp. motor drive mounted in the poop deck extending from the trailer body over the cab roof. This exposed deck takes in the air for cooling the coils.

THE sketch gives the general layout of the refrigerator system as well as its power drive. Power is developed with the new Whitaker-Upp power system consisting of generator, motor, and electrical controls. The cooling unit by Kelvinator and Century Electric consists of the condenser and heat exchanger. Cooled air is forced into the trailer interior by the fan and is distributed by ducts built in at the ceiling at the front. The motor is called the dual type since it can take power either from the generator when the engine is running or may be plugged into a power socket when the unit is parked in a garage or service station while on the road.

Since the preservation of the berries depends upon a uniform distribution of chilled air, provision has been made to assure this. First of all, the floor has slats which raise the bottom tier of crates and permit air to circulate from underneath. Then each crate has strips ¾ in. thick tacked on the sides to separate each crate from its neighbor and thus promote circulation around the crates. Finally, the crates are stacked so that the top level is 6 in. below the ducts in the ceiling, thus permitting the chilled air to pass freely into the body.

To handle the 457 crates under these conditions, the body has been made with the following inside dimensions—22 ft. long, 82 in. wide, 89 in. high. The body has been lined with Dry-Zero blankets 3 in. thick on the sides and roof while the floor is laid on a thick, hard blanket of Haircraft by Wilson & Co. This blanket is strong enough to carry the entire pay load so that the sealed steel floor lining is laid directly on it without other support.

THE trailer is a Model 6 Special by Fruehauf, equipped with vacuum power brakes and fitted with 9.00 in. dual tires. The tractor is the latest edition White Streamline Model 704 tailored by Count Sakhnoffsky, and is of 2-ton capacity.

Distribution of weight has been carefully worked out to permit this train to pass all restrictions imposed on interstate vehicles. It works out roughly as follows: trailer rear axle, 15,000 lb.; tractor rear axle, 13,000 lb.; tractor front axle, 4000 lb.

J. G. Obermier

J. G. Obermier, vice-president in charge of production of the Timken Roller Bearing Co., died recently in Tucson, Ariz.

Eric Ekstrom

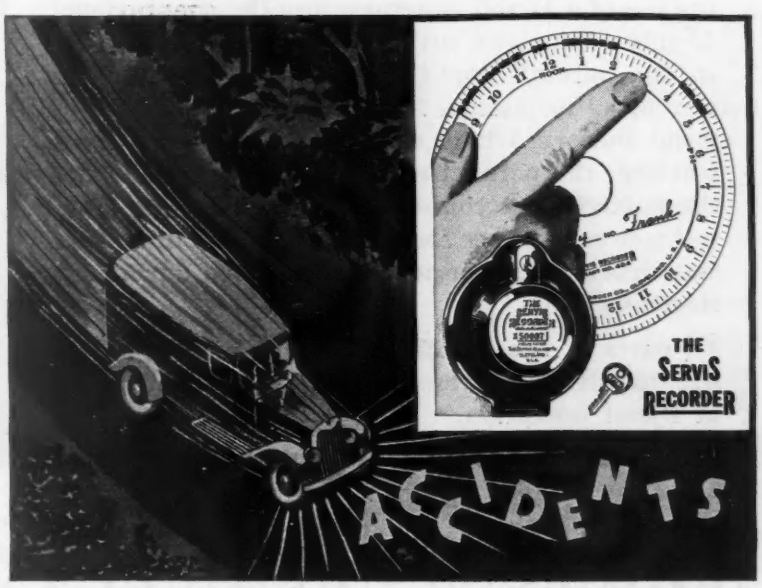
Eric Ekstrom, a director and vice-president of Borg-Warner Corp., died Jan. 12 after a brief illness.

How to PREVENT SPEEDING .... *and* ACCIDENTS

WHY do trucks speed? They don't speed just for the fun of it. They speed in order to make up wasted time or to get through early so as to have spare time later in the day.

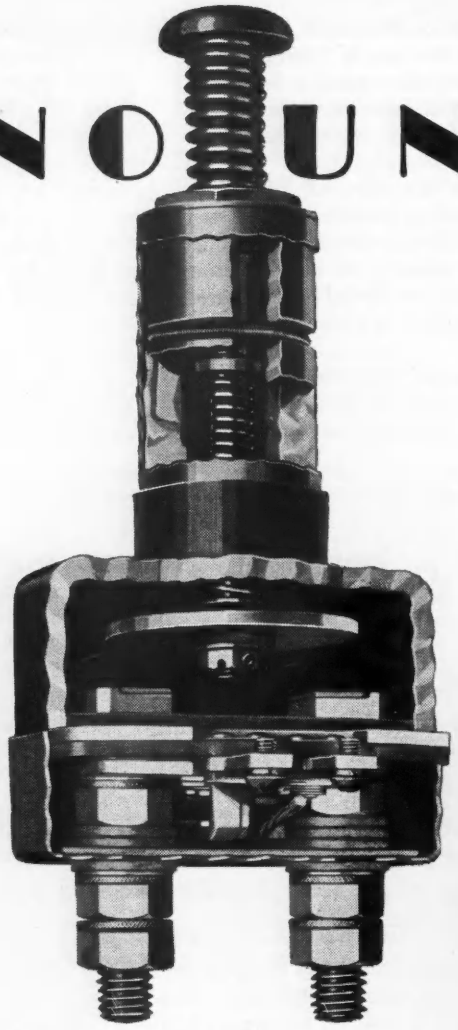
- Well, what's the best way to cure this evil? That's easy: Have it impossible to "make up" wasted time by having this wasted time show up on the chart of the *Servis Recorder*—where you can see it and correct it.
- See, on the chart below, how the truck stood idle from 2:00 to 4:00 in the afternoon. No chance of "making up" that delay, even if the driver does speed and does "get through" on time. The driver knows this, so he doesn't speed and he doesn't have accidents.
- That's the way to cure speeding, and that's why many insurance companies are urging fleet owners to put *Servis Recorders* on their trucks. It makes each truck do a "regular" day's work, and that kind of a truck doesn't speed, because there's nothing to be gained by it. Write for our new booklet.

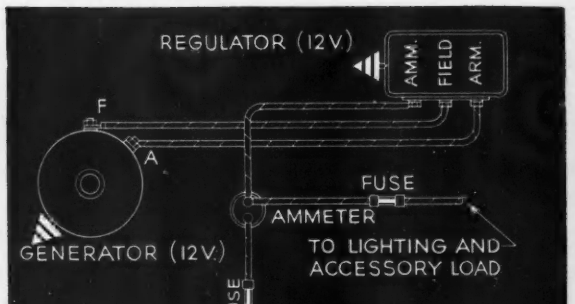
THE SERVICE RECORDER COMPANY, Cleveland, Ohio



ANNOUNCING..

A NEW *Series-Parallel* STARTING SWITCH *for Diesel Engines*





A NEW series-parallel starting switch, designed and engineered particularly for Diesel installations, has just been added to the Delco-Remy line of electrical equipment.

This new switch, used in connection with the Delco-Remy solenoid operated starting motor, permits the use of a 12-volt generator and the conventional 12-volt equipment with a 24-volt starting motor. In the normal circuit, two 12-volt batteries are connected in parallel for a 12-volt supply of electrical power. When the switch is operated for starting, the parallel connections are broken and the batteries are connected in series—giving a 24-volt source of power for starting. Lights and other electrical connections are not disturbed during the starting cycle.

All parts of the switch are rugged and of ample size to withstand the severe service encountered in Diesel operation.

DELCO-REMY CORPORATION • ANDERSON, INDIANA

Delco-Remy

UNITED SERVICE MOTORS

Service and parts for all Delco-Remy units are available in the United States and Canada through Branches and Distributors of United Motors Service . . . in other countries through Overseas Motor Service Corporation.

OVERSEAS MOTOR SERVICE CORPORATION

Fleet owners **KNOW** *that*

A FINE FINISH MAKES FINE-LOOKING TRUCKS

MORE THAN 50% of the trucks owned and operated by Swift & Company are finished with Du Pont Automotive "DULUX."

It is no longer any great secret why owners of large fleets are using this finish. Swift & Company is only one of many users of Automotive "DULUX" who are assured that it preserves the good appearance of their trucks, which gains good will and reflects the prestige of the company. They are assured it provides lasting protection against wear and tear and that it reduces maintenance and refinishing costs to a satisfactory low level.

Automotive "DULUX" contains *every* property you expect in the designation of a "fine finish" for trucks. Years of testing and of actual service have demonstrated that it retains its original color and gloss longer and provides a protective film of greater durability.

With "DULUX" you save money on original application . . . and on future repaintings. It assures greater protection against the weather and against damage from grease, oil, gasoline, acids and other things that harm less durable finishes. The hard, elastic "DULUX" film is resistant to sharp blows and mechanical injury. Your fender may be dented, without breaking the "DULUX" finish. Constant touch-up is reduced to a minimum.

Your own refinishing shop can apply quick-drying Automotive "DULUX" with brush or spray. Or if you have only a few trucks, you can have them done quickly by an Authorized Du Pont Refinisher. At your request a du Pont representative will call to give you full information about Du Pont Automotive "DULUX." Write E. I. du Pont de Nemours & Co., Inc., Finishes Division, Wilmington, Delaware.

DU PONT

REG. U. S. PAT. OFF.

AUTOMOTIVE

DULUX

REG. U. S. PAT. OFF.

DU PONT ON THE AIR—*Listen to "The Cavalcade of America" every Wednesday 8 P. M., E. S. T., over Columbia Broadcasting System*

Will Shippers Invoke Sanctions?

(CONTINUED FROM PAGE 19)

they could handle it cheaper than shipping by freight.

Since the time of the A.T.A. meetings, this writer has talked with probably two score of shippers. Not any of them has come out with the flat statement, but there have been strong implications hurled that if truckers file such schedules with the commission as will increase packaging costs and require complicated treatments of commodities, they will turn over the bulk of their tonnage to the railroads—as retribution, or punishment of the industry, if for no other reason.

The talk that shippers may purchase equipment of their own reveals that a good many of them already have the nucleus for such a measure.

ONE of the first bombshells to be exploded publicly as to what courses and measures shippers might take if the trucking industry "follows its nose blindly," was set off by E. L. Muntweyler, traffic manager of Montgomery Ward & Co., mail order house. As later developments have proved, Mr. Muntweyler spoke for more than his own concern; he spoke for a group of traffic men, by common agreement. Although he spoke outright for what his own concern might do, his remarks bore certain implications.

MR. MUNTWEYLER gives the trucking industry six advantages as public conveniences over railroads:

1. Liberalized packaging requirements.
2. Freedom from complicated commodity classifications.
3. Convenience of pick-up and delivery.
4. Give speedier service, especially on the short haul.
5. Greater convenience for emergencies and small parcels transfer.
6. Can reach points not accessible by main line trunk railroads.

He gives to the railroads four advantages over trucks:

1. Organized responsibility.
2. Less danger of loss from theft and hijacking.
3. More convenient where low density and long haul are the considerations.
4. Less bother in adjustment of claims.

However, two of the six points favoring trucks include the all-important questions of packaging and commodity classifications. It is his opinion that if truckers lose these two advantages they will have forsaken practically everything that has served to make them desirable. Their four remaining attributes will be as naught, he figures.

ILLUSTRATIVE of the importance of the two essentials which truckers have concerned themselves with mainly, Mr. Muntweyler calls attention to the experiment his shipping department conducted. It involved two or their stores, both the same distance from Chicago. For a year all the freight from Chicago to one store was shipped by rail, and all the freight going out to the other store was carried by truck. Accurate costs were kept on both.

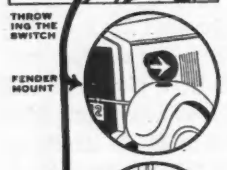
When the year was up it was found that it had cost Ward's $1,100 more to package only in compliance with regulations for the store they had serviced by rail.

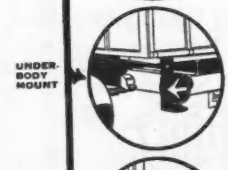
"This saving more than anything else convinced us of the value of truck transportation," comments Mr. Muntweyler. "As the direct result of this test we immediately diverted several thousand tons of freight to truckers which had previously been going out by rail.

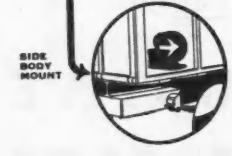
(TURN TO PAGE 82, PLEASE)

DIETZ MODERN LIGHTS

HANDSOME • POPULAR • RELIABLE • LEGAL







DIETZ

MARKER LIGHTS, PILOT DIRECTION SIGNALS AND MOTOR FLARE KITS FOR TRUCKS AND BUSES

MANY bad collisions occur at turning points. Owners of fleets who insist upon safe operation of their trucks or buses will be interested in Dietz Pilot Direction Signal. This consists of four lamps for front and rear mounting, together with a control box for operation at the steering wheel. The device is approved in states requiring this type of signal. Cost of installation is exceptionally small because all operating parts are assembled in the control box at the factory.

Dietz line of Marker Lamps embraces all desirable types now in demand, both single and triple units. Dietz Motor Truck and Bus Flare Kits hold either two or three sturdy, reliable torch flares, for use when trucks are stalled on the road at night. Furnished with or without red flags.

Your Dealer Can Supply You With Dietz Motor Lights. Our Complete Catalog of Motor Lamps and Accessories will also be useful. Let us send you one.

DIETZ NO. 332 FLARE KIT

R. E. DIETZ COMPANY, NEW YORK

PIONEER MAKERS OF VEHICLE LAMPS, FOUNDED 1840

HEAD LIGHTS • TAIL LIGHTS • MARKER LIGHTS • DITCH, FOG & SPOT LIGHTS • DIRECTION SIGNALS
TRUCK FLARES • REAR VISION MIRRORS • FLOOD LIGHTS • CATAPHOTE REFLECTORS • FIRE EXTINGUISHERS

THE PERFECT COMMERCIAL FINISH

EASY WORKING . .

FAST DRYING . . .

GREATER PROTECTION

GREATER BEAUTY . .

FLEET owners all over the country are recognizing the exceptional quality, beauty and durability of Ditzco Enamels. Ditzco provides many advantages over old time enamels. It is quick drying—high in solids—goes farther—covers better—and produces a finer, smoother job for less money.

May be applied to any type of commercial vehicle, over wood, metal or old finish. Dries dust free in fifteen to twenty minutes at room temperature, with a beautiful high gloss. A complete series of attractive colors.

Fleet owners who maintain uniform color designs on trucks in all parts of the country will find the Ditzler national organization a decided advantage.

DITZLER COLOR COMPANY
DETROIT, MICHIGAN

DITZCO ENAMEL

STANDARD IN THE AUTOMOTIVE INDUSTRY

(CONTINUED FROM PAGE 78)

"Not only did the trucking industry profit by increases from our own house, but other shippers learned of it, and they diverted other thousands of tons of freight from rails to trucks. I feel confident that it can be safely said that this test was instrumental in diverting at least 15 per cent of freight tonnage to trucks."

SEARS ROEBUCK & CO. have hauled a part of their own freight for the last five years. W. J. Williamson, traffic head of the latter concern, tells that they are contracted with 850 trucking concerns throughout the U. S.

Sears Roebuck & Co. have kept cost checks of operating over practically the entire territory they serve. Up to the present they have never made effort to serve any territory entirely with their own equipment, but have skip-checked to take in as many routes as possible. In every such instance the experience has been that they can haul their own freight cheaper than they can have it hauled by hired carriers.

"Why, if that is true, haven't you entered the private carrier field in a more energetic fashion?" we asked Mr. Williamson.

His reply was that they are merchandisers and that their duties in those relations are so numerous that they have no desires to enter the transportation business. When the question was put to Mr. Muntweyler, he made almost the same reply. He added, however, that his house would be at some disadvantage in figuring how to handle their back haul problem. He believes, though, with coordination from their buyers as to sources of supply that this is a thing which will adjust itself with time. Mr. Williamson does not consider Sears' back haul problems as of a very grave nature. A higher percentage of their sources of supply is derived from the territories and areas where they have their retail distribution. He says it would be relatively simple for them to coordinate their sources of supply to absorb any back haul deficiencies.

THE third point which shippers have shown fear over has been the possibility of a transportation monopoly between trucks and rails. Most of the shippers' agents and traffic managers who have been sounded out have explained that their fears here have not been born of intents on the part of the trucking industry. They explain that the railroads have already gone so far in their uses of trucks to supplement their rail facilities that they cannot help but have an influence on what the trucking industry itself does. With railroads filing truck rates and schedules for their motorized equipment, the commission is bound to parallel rates filed by independent trucking firms with trucks operated by rail lines.

That the trucking industry would enter into any voluntary monopolies with the railroads has never been considered seriously.

L. J. LACEY, executive secretary for the National Industrial Traffic League, points out that truckers are in a critical position here. He calls attention to the fact that any dealings before the commission call for legal aid, and that whereas every one of the 150 trunk lines throughout the country is abundantly supplied with counsel whose sole practice is with preparation of briefs and arguments before the commission, there are probably not more than twenty-five trucking concerns whose size will warrant their employing such full-time counsel. And, he contends, when the others are forced to hire counsel for special commission matters they will invariably find that the fees are so high as to be out of all proportion to the importance of the matters.

30% More Space!

on the standard Ford Chassis

The Dearborn Line

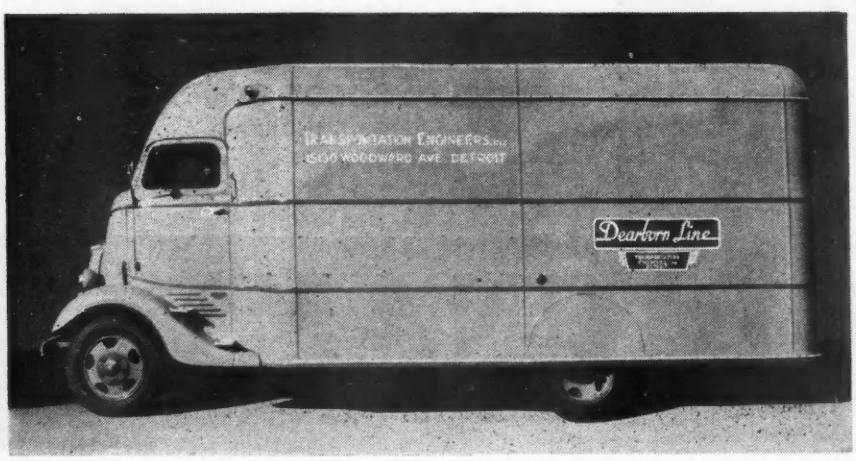
CAB-OVER-ENGINE FOR FORD TRUCKS

You can use any type of body with the Dearborn conversion, of course. The DeLuxe body shown below has a whale of a lot of room, about 1/3rd more than provided by the usual type of cab layout.

For example, on the Ford 157″ chassis, you get *16 feet* of loading space, with an inside height of *6 feet, 10 inches!* Likewise, 12 feet on the 131½″, and 10 feet on the 112″ Tractor Type Truck.

Ask your Ford dealer, or write

TRANSPORTATION ENGINEERS, Inc.
15140 Woodward Avenue **Detroit, Michigan**



STRIPING

(CONTINUED FROM PAGE 21)

their lines before striping. Using the molding as a guide, a marker is run along the cowl and a light impression left where your stripe is to be.

HOW do fleets generally do their striping?

Using a sheet of glass as a palette pour off a small amount of striping color. Pour the striping thinner into a separate container, as it is not desirable to mix the two. Work the striping pencil through the thinner thoroughly in order to remove any grease which it may contain. Dispose of this thinner and refill the container. Draw the striping pencil through the clean thinner several times to equalize or straighten the hairs in the striping pencil. Now draw the striping pencil through the striping material, then through the thinner and work both materials out on the glass palette. Fig. 1.

While going through this motion, draw the striper toward you until you have thoroughly filled the hair stock of the pencil to the heel or base, then draw the striping pencil across the glass in striping position, that is, edgewise, with sword pointing to the glass palette. If the striping pencil shows a tendency to fall limp or to slump, the indication is that the mixture is too heavy. In this event it is best to again dip the point of the striping pencil into the thinner and work it out as already described across the glass palette until the pencil stock does not fall from the heavy weight of the color. Fig. 2. At this point the striping pencil is properly filled and in proper condition to proceed with the striping.

When you are striping, you are doing two things at once. First, you are spacing the pencil; second, controlling its pressure. The knack of doing these two things at once is easily acquired. Fig. 3. Place the striping pencil between the thumb and index finger with thumb on top, sword or dagger head down. The correct way to hold the striping pencil, in order to assure obtaining the proper pressure, is to bow the thumb knuckle slightly upward. This will give you better pressure control.

Do not squeeze the pencil in the striping hand. Hold it loosely. Most operators stripe while standing at arm's length from the panel. The reason is that when standing up close it becomes necessary to shift the position while pulling the stripe and this movement of the body frequently causes a failure. A good striper employs guide or space control. This is merely the act of placing the third and fourth fingers as guides above or under the molding as the case may be. Always start the stripes from the tip of the striper, gradually lowering the same to the size of the line desired. This finger position gives the necessary space control.

AFTER drawing your first section of line from a position at arm's length to the panel, refill the pencil to continue the stripe. Begin by connecting your stripe several inches from the end of the line. Again start first with the tip of the pencil, gradually lowering the pencil to the desired width. The pencil should not be lowered beyond the dagger or sword angle point, which is approximately the first three-quarters of an inch of the brush. Fig. 4.

Sometimes an operator is obliged to reverse his striping position where an obstruction on the cab or van makes this reversal expedient. In this reversed position, gage your striping line, hold-

(TURN TO PAGE 94, PLEASE)

only **17.50**

HEAVY DUTY

NEW and IMPROVED

Bear Jiffy Tire Spreader

This powerful tire spreader makes the toughest, stiffest casing say "uncle" in a hurry. Adjustable to fit all tires from passenger type to the largest heavy duty. A portable one-man tool. Just the ticket for roadside emergency jobs—saves time and rubber. When used on the floor—on the curb—on the roadside—simply roll tire onto base of spreader—quick—easy—handy. Equip each of your trucks with this low-priced universal spreader. Soon pays for itself. Bear Mfg. Co., Rock Island, Ill.

BEAR EQUIPMENT INCLUDES: WHEEL ALIGNERS » FRONT-END MACHINES » AXLE PRESSES » FRAME STRAIGHTENERS » WHEEL STRAIGHTENERS » ALINEMENT RACKS ALINEMENT GAUGES » WHEEL BALANCE STANDS AND LUGS » SPRING RE-ARCHERS » TIRE SPREADERS » CASTER SHIMS AND MANY OTHER ALINEMENT TOOLS

SIOUX Metal Spray Gun

No. 1300

Complete with cord, air hose, 1 jar Cold Tinning Compound for Steel, Applicator, Clean Out Tool and 5 lbs. Metal Alloy.

Net Price $42.50

It Shoots Cold Metal Spray To Fill Dents and Uneven Surfaces WITHOUT heating body metal!

SAVE the ordinary cost of removing doors and upholstery . . . eliminate all grief of buckling and warping from heat . . . replace long tedious hand labor methods . . . save material, time and money on every job . . . with the SIOUX Metal Spray Gun. It's a fast, practical, easily operated tool, connected with shop air line and light socket.

Shooting Metal Spray on Door Panel

NO ACIDS Sioux Cold Tinning Compound readily adheres the sprayed cold metal to body metal. It's easily applied.

MORE BUSINESS—MORE PROFIT

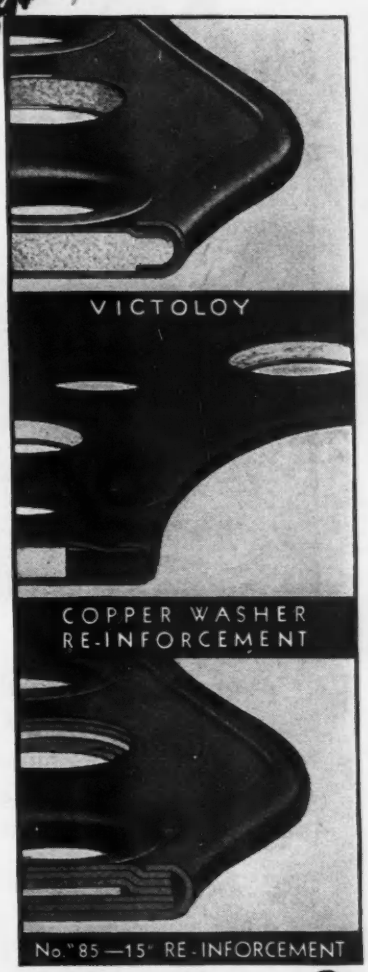
on body and fender repair work . . . with this ingenious, amazingly efficient tool. It has many uses in any shop. It *modernizes* auto body repairing.

Ask Your Jobber's Salesman

ALBERTSON & CO. INC.
SIOUX CITY, IOWA U.S.A.

Filling Dent on Back of Body

STANDARD THE SIOUX WORLD OVER



Dependable Performance Assured by Victor Reinforced Gaskets . . .

Keeping abreast of the modern high compression and heavy duty motors for bus, truck, industrial and passenger service, Victor has created and developed types of gaskets that meet all requirements. . . . Gaskets that withstand high pressure, excessive heat, make an extra tight seal and give dependable performance.

Loss of power and loss of profit from delays due to leaky or blown out gaskets may be avoided by using the gaskets preferred by the motor builders—Victor Reinforced Gaskets. They insure profitable, dependable performance wherever used.

VICTOR MANUFACTURING & GASKET CO.
P. O. Box 1333, 5750 Roosevelt Road, Chicago, U. S. A.

VICTOR!

THE WORLD'S LARGEST GASKET MANUFACTURER

METALBAC GASKETS . . . VICTORITE PACKING . . . VIGASCO CEMENT . . . GREASE RETAINERS . . . ARMSTRONG-VICTOR PRODUCTS

STRIPING

(CONTINUED FROM PAGE 91)

ing the striper in your hand and begin as described before, laying the point at the end of your preceding line but not touching it. This is like getting a "bead" on the preceding line.

There are occasions when operators are compelled to stripe free hand without a guide or molding to go by. This situation frequently occurs when making curved stripes and occasionally around the panels of the hood louvers. This trick has been accomplished very neatly with a minimum of failure after a little practice. The procedure is to place the little finger of the opposite hand on the panel surface of the object on which you are striping. Place the thumb of that same hand on the wrist slightly behind the thumb knuckle of the striping hand. This will serve to steady the wrist muscles and nerves of the striping hand. It is used simply as a means of guiding the striping hand. However, the operator should again be cautioned never to hold the striping pencil tightly. Best results will be accomplished by holding the striper in the striping hand without the least strain on the wrist muscles or nerves. Fig. 5.

"Nerve control" is not a possession of only a few finishers. Even nervous people can stripe. This is true because concentration is the important factor in striping. By concentration and application to the work, you can easily acquire the knack of striping even though your hands ordinarily may be unsteady.

PERHAPS a few precautions regarding the care of the striping brushes are desirable. Following the striping job, clean the striper thoroughly with thinner. Be sure to fully remove all the color in the stock of the pencil, particularly from the base or heel. To allow color to dry in the base or heel of a striper will cause the pencil to lose its elasticity and will have the tendency to spread the sword or dagger points. After cleaning the pencil, it is best to fill the striper with pomade or some similar substance. This material will hold all the hairs or brush bristles perfectly straight and keep the brush in proper shape. Cup grease is not recommended for this purpose as it will rot out the hairs. Straighten the hairs out by drawing them through the fingers. Make a light stroke toward you with your finger slightly pressed on the flat haired surface of the pencil as you draw the pencil toward you. Your pencils, cleaned and cared for in this way, will always be in good condition for further use.

Before concluding, mention should be made of the mechanical stripers now on the market. These are small gadgets, manufactured under different names, consisting of a small container for paint, and a roller. The edge of the roller is made of a material that absorbs the paint and, as the roller is rolled on a panel, it leaves a perfect stripe. This is a simple and easy method for striping. These mechanical stripers are inexpensive and may be used to good advantage by inexperienced shop men.

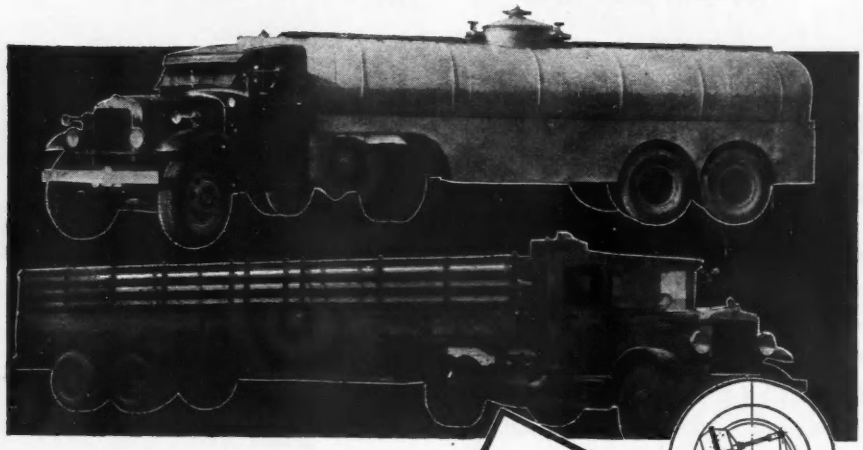
What does this form of decoration cost? Aside from the initial expense of the striping pencils or automatic striper the cost of your striping job is confined to the small cost of what little paint is used and the hour or two of time required to do a conservative striping job on a truck. Once done, it will last as long as the major paint job and need not be done over until the entire truck is refinished again.

Stripes will give your trucks the mark of distinction.

★ LATHAN BESLER

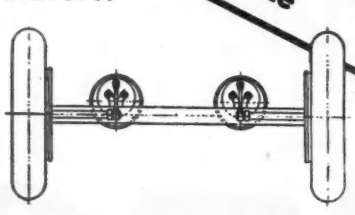
Engineered

POWER BRAKES



THE latest and most effective power brake installation ever devised for trailers and semi-trailers . . . now recommended and used by the nation's leading trailer manufacturers.

DUAL INSTALLATION on the Axle



LATHAN SINCE 1911

A LATHAN product

★ *makes application SELF-EQUALIZING*

★ *provides perfectly BALANCED CONTROL*

★ *reduces wear on tires and brake lining*

★ *greatly simplified installation, cuts time and costs*

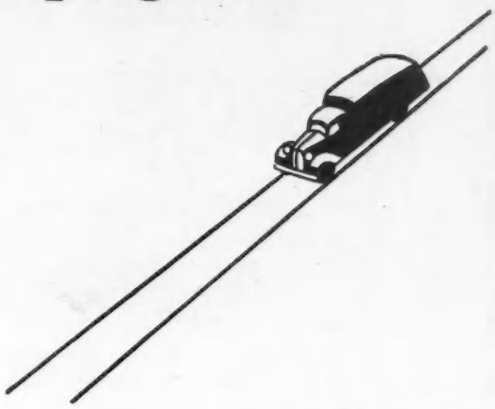
★ *adaptable to ALL trailers and semi-trailers*

Write for catalog and folder describing this remarkable installation, or ask any leading trailer manufacturer. Nation-wide sales and service.

LATHAN CO., Inc.

SAN FRANCISCO - Polk and Pine Sts. DETROIT - 477 Selden Ave.

What is your cost of keeping cold?



Keeping perishable loads cold involves three cost elements — Insulation, Refrigeration and the Dead-Weight of these two. You are sure costs are kept at a minimum when you use Dry-Zero Insulation.

FOR years truck engineers have specified Dry-Zero Insulation for refrigerated trucks to be sure of the lowest possible costs.

Dry-Zero Insulation keeps the original installation cost low because it gives maximum insulation per inch thickness.

And it keeps refrigeration expense at a minimum because of its high overall heat stopping efficiency. The Dry-Zero insulated truck uses the least possible refrigeration per day.

Dry-Zero Insulation also keeps ton-mile operating expense low because it is so light it adds little to the dead-weight of the truck. Fleet records show that this operating saving on a 1-ton truck has run as high as $233.90 per year, per truck.

Both refrigerated and unrefrigerated truck bodies are more efficient, cost less to operate, give best possible protection to perishable loads when Dry-Zero Insulation is used.

By using Dry-Zero Insulation you also get permanent insulation protection. It is not affected by moisture; will not rot, disintegrate, settle or absorb or develop odors. Specify it for your next truck. A Dry-Zero engineer will help you solve any insulation problem. Write to us for a copy of the Truck Insulation Book.

DRY-ZERO
REG. U.S. PAT. OFF.
THE MOST EFFICIENT
COMMERCIAL INSULANT KNOWN

DRY-ZERO CORPORATION
222 N. Bank Drive, Chicago • 687 Broadview Ave., Toronto

A TRUCK WITH 3 AXLE RATIOS RUNS CIRCLES AROUND A TRUCK WITH 1

You can convert your truck

Common sense requires 3 axle ratios in a truck. Competition demands 3. Wise operators already use 3. You don't have to buy a new truck to get 3 axle ratios. Simply install a Watson-Brown-Lipe Auxiliary Transmission.

52% MORE POWER for ruts and grades with low-speed axle ratio.

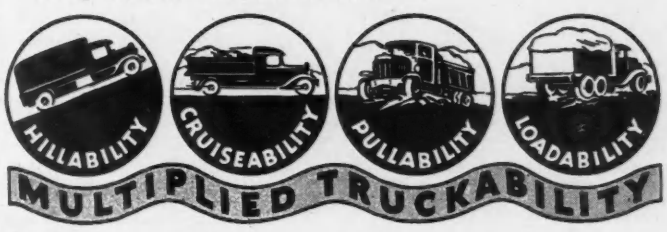
23% LOWER ENGINE SPEED for cruising with high speed axle ratio.

3 DIFFERENT SELECTIVE AXLE RATIOS for any condition of load or road.

20% REPORTED SAVING in gas, oil and engine wear.

WATSON-BROWN-LIPE AUXILIARY TRANSMISSIONS

Fords, Chevrolets and 35 other makes of trucks in any model or capacity can be equipped with the 3-speed Watson-Brown-Lipe Auxiliary Transmission which gives 3 different axle ratios. A multiple speed auxiliary that combines low, medium, and high in one unit. No unsprung weight. Improves entire power line. Any capable mechanic can make installation back of standard transmission. 100% salvageable. Send for literature. Specify make, model, year, and wheelbase of truck.



Watson-Brown-Lipe Auxiliary

TRANSMISSIONS

"Power Take-Offs — Universal Joints — Tru-Stop Brakes"

H. S. WATSON CO. • 522 - 4th Street, San Francisco

REGIONAL DISTRIBUTORS

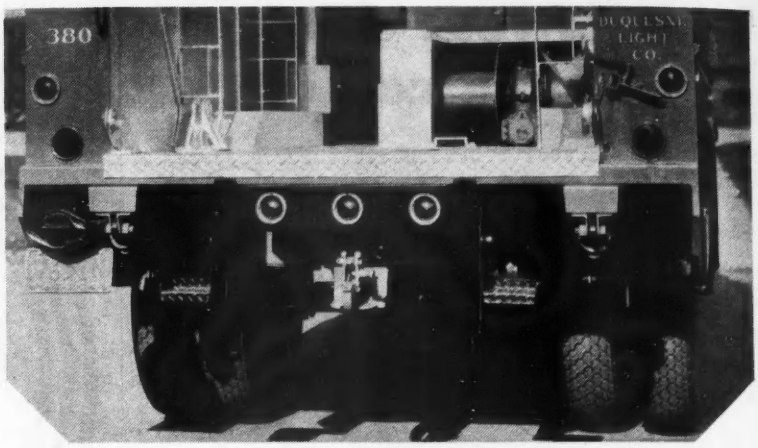
Billings, Mont.—Northwest. Auto Sup. Co.
Boise, Idaho—Olson Manufacturing Co.
Butte, Mont.—Anderson Motor Co.
Denver, Colo.—Timpte Brothers.
Detroit, Mich.—H & H Wheel Service, Inc.
Ft. Wayne, Ind.—Allied Truck Equip. Co.
Fort Worth, Tex.—Hobbs Mfg. Co.
Indianapolis, Ind.—Allied Truck Equip. Co.
Jacksonville, Fla.—L. S. Teague & Co.
Kansas City, Mo.—Dealers Transport Co. Truck Equipment Division
Los Angeles, Calif.—Lambert Co., Ltd.
Louisville, Ky.—Dealers Truck Equip. Co.
Newark, N. J.—Wheels, Incorporated
New Orleans, La.—John M. Walton
New York, N. Y.—Wheels, Incorporated
Phoenix, Ariz.—Welch Manufacturing Co.
Portland, Ore.—Trombly Truck Equipment
St. Paul, Minn.—Colby, Ramm & Co.
Salt Lake City, Utah—Koepsel & Love
Seattle, Wash.—A. D. Blackler Company
Toledo, Ohio—Turner Brake Service
Tulsa, Okla.—Braden Winch Service Co.

The Public Be—Saved

(CONTINUED FROM PAGE 18)

classification of "struck while parked." Records offer an opportunity to stress the prevention of currently predominating types.

In 1934, 239 or 15.6 per cent of the 1532 employees licensed as operators were involved in 299 accidents while 84.4 per cent had no accidents. A total of 188 employees had one accident each, 42 had two each, and nine had three each. Seventy-two, or 30 per cent, were also involved in accidents in 1933, which points to the probability that a part of this group is accident prone.



Direction signals and reflector lights are part of each truck's safety equipment

In 1933, the previous year, 19 per cent of the drivers had all of the accidents, and 81 per cent had no accident. Two hundred twelve drivers had one accident each and 54, or 4 per cent, had more than one for a total of 124 accidents or 37 per cent of the total.

The responsibility of this utility's drivers for accidents in 1934 was established as follows:

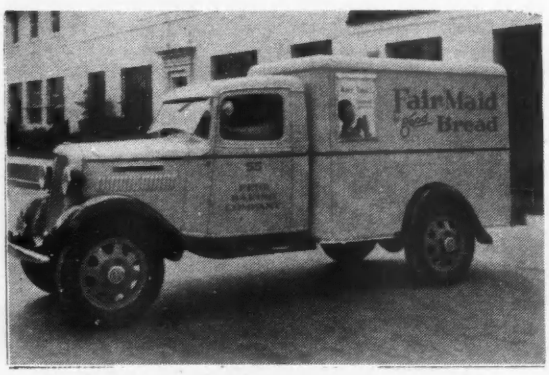
	No. of Accidents	Per Cent of Total
Wholly responsible	68	22.8
Partly responsible	81	27.1
Responsible accidents	149	49.9
Not at fault	150	50.1
Total	299	100

The experience in this fleet which I believe is typical, confirms the conclusion of Dr. Alvhh R. Lauer of Iowa State College, in his extensive testing of operators. He has found evidence of three groups of drivers: the accident free who constitute from 70 to 75 per cent of all operators; the accident liable who constitute 20 to 25 per cent; and the accident prone, a minority who have the majority of accidents. He makes the statement from his experience that if 7 per cent of the drivers were removed from the road the number of accidents would decrease 50 per cent.

THE frequency of responsible accidents, and the proportions that they bear to all fleet accidents, gives an indication of the care exercised by drivers, but the frequency of *all* accidents should be followed as an index of progress in accident prevention.

An operator at the time of an accident is usually in an uncomfortable position until his superiors have indicated whether he was responsible or not. A satisfactory method of establishing responsibility is by the means of ac-

BAKERY FLEET OPERATORS VOTE MET-L-WOOD RIBLESS



The Reasons:

Light because lazy materials have been eliminated — no framing members, thinner walls, lighter roof.

Strong Met-L-Wood roof will rigidly support heavy load — side walls are even stronger. Strong as ¼" Boiler Plate!

Good Looking—Met-L-Wood construction can be streamlined. Its smooth metal surface takes a high gloss finish.

Insulated against heat and cold.

Few Repairs — Met-L-Wood bodies require few repairs. Users say, "We eliminate repair costs."

Lower Floors increase loading space, lower center of gravity, and increase convenience of operation.

Prompt Service — Materials on designs for one or more bodies promptly available, to body builders in the manner most convenient in servicing fleet accounts.

Dust Tight — Leakproof because of its special rear end construction and method of assembly. Only Met-L-Wood bodies are permanently Dust Tight—Leakproof.

Let us tell you more!

Designs available for every type of enclosed hauling.

MET-L-WOOD CORPORATION
6755 W. 65th Street
CHICAGO, ILL.

Another B & J TRAILER FLEET

with exclusive *Gravity Spring Suspension*

What is Gravity Spring Suspension? We'll tell you!

B & J with GRAVITY SPRING SUSPENSION (Standard Equipment) permits you to eliminate many losses due to damaged loads. It provides the correct spring action regardless of whether the load is light or heavy—or whether the road shock is light or heavy.

Without GRAVITY SPRING SUSPENSION the springs in order to be sufficiently strong to absorb the heaviest of shocks are necessarily so stiff that light shocks fail to actuate the springs and the entire load simply bounces around on the trailer floor.

The coil spring in the B & J GRAVITY SPRING SUSPENSION absorbs all of this jolting shock that ordinarily bounces the load all over the trailer which causes severe losses due to breakage. The main service springs come into play only on the most severe bumps and shocks. Over the roughest road the load is protected at all times. The load stays on the floor.

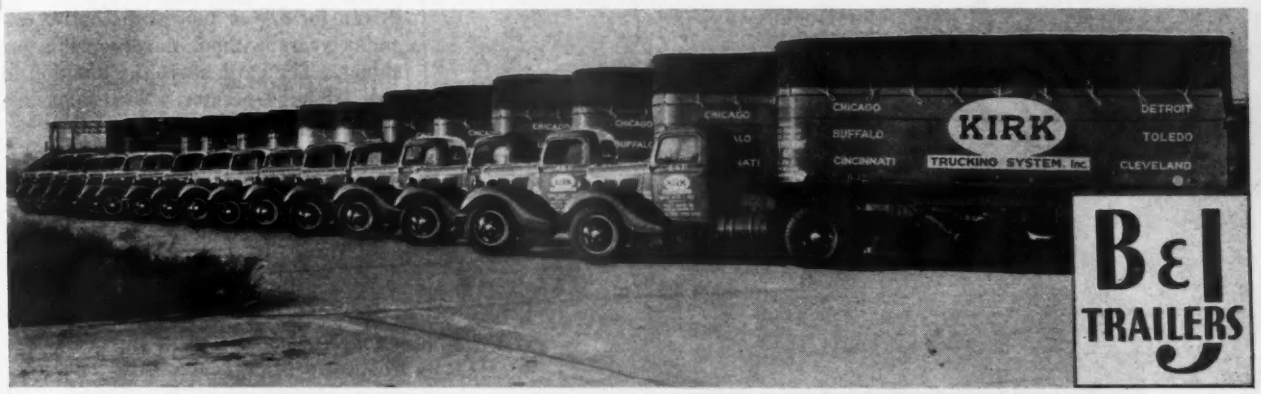
By eliminating side sway B & J GRAVITY SPRING SUSPENSION will permit you to increase speed around curves and on crowded roads and still maintain a higher degree of safety. You owe it to yourself—to your business to investigate the new B & J TRAILER and this REVOLUTIONARY TYPE OF SPRING SUSPENSION which has been standard equipment on B & J Trailers for the last three years.

Springs guaranteed for the life of the trailer

B & J TRAILER COMPANY, 3913 Michigan Ave., Chicago, Ill.

Here's What It DOES!

Floats the Load.
Adds Driver Comfort.
Prevents Side Sway.
Absorbs All Road Shock.
Increases Tire Mileage.
Improves Braking Efficiency.
Increases Speed with Safety.



Larcoloid!

Pictured above, with interior view, is one of a fleet of 125 school busses purchased in the City of New York, and LARCOLOID was the specified finish inside and out.

Inside and Out

And it isn't surprising, that Cities, Railroad Companies, Street Railways, Fleet Owners, etc., specify LARCOLOID, the "1 Hour Dry" enamel, for new equipment as well as for refinishing jobs, after they have used and tested it over a period of time.

These organizations have found that LARCOLOID:

Really dries in 1 hour.
Has a beautiful deep lustre.
Has exceptional durability.
Is easily applied—brush or spray.
Is more durable than lacquer.
Has adhesion second to none.
Is acid and alkali resisting.
Contains no gun-cotton—is safe.
Has high insulating quality.

Write for the big descriptive circular concerning Larcoloid—the "1 Hour Dry" enamel.

Larkin Co Inc. PAINT DIVISION Buffalo, N. Y.

(CONTINUED FROM PAGE 110)
cident committees which investigate accidents. Drivers meet with the committee, the facts are studied, and the committee's findings are reported to the department head for such action as he sees fit.

A routine was adopted in 1934 in our companies that is working out well. About two weeks after an accident, a form is sent by the Accident Prevention bureau to the head of the department to which a vehicle was assigned at time of occurrence. This form gives a record of the driver's previous accidents and asks the department head, with the return of the form, to indicate his opinion as to whether our driver was wholly responsible, contributed to the cause, or was not at fault. The driver's record is charged accordingly. This places the determination of responsibility with the driver's superior and any tendency toward accident proneness is brought to the attention of superiors.

Road and code tests are usually required of employees before they are authorized to operate company owned vehicles. Drivers are tested for vision and hearing every two years. Most full time drivers submit to a complete physical examination annually. All employees are urged to have an annual physical examination by company physicians without expense.

Many plans for the recognition of safe driving are in effect. These include certificates of various kinds, buttons, badges, cards, etc. Bonus systems are rarely used in public utility operations because of the incidental nature of driving.

I SHOULD like to describe a simple and effective means of giving recognition that has been employed in our companies for the past six years. With the renewal of an employee's company license each year, Honor Operators' licenses are issued to those who have driven for one or more consecutive calendar years without a responsible accident. The card bears the notation in red, "Honor Operator. No Responsible Accidents, ... years."

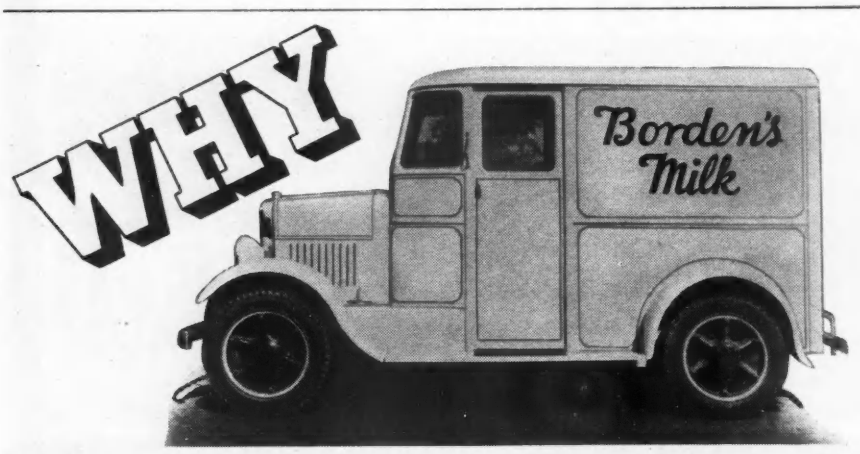
Employees are proud of a safe driving record, and of any official recognition. As the number of years builds up greater care is taken to preserve a good record. Increased concern is felt as to responsibility for all accidents.

Here is a tabulation showing the number of employees in our companies who, upon being licensed for 1934, were given one to five-year honor cards. Our use of these cards started in 1929.

No responsible accidents for:	No. of Drivers	% of All
5 years	286	18.6
4 years	138	9.0
3 years	185	12.1
2 years	189	12.3
1 year	230	15.0
No honor license due to accidents in 1933, or because licensed first time in 1934	504	33.0
Total	1,532	

NONE of us can produce the best results without knowing the attitude, policies, and desires of the management. A manual for motor vehicle operators that outlines company policies serves admirably. Such a manual should be helpful and informative rather than consist of dos and don'ts.

One bulletin on a bulletin board displayed for a limited time will produce the best results. If left up until crowded out it is apt not to be read. The attention of employees should be focused on a few ideas at a time. Bulletins, which show company experience are helpful. Safety posters of the National Safety Council, insurance companies and others, or especially prepared ones, keep safe driving alive in the minds of the drivers. Safety mes-



THE MAKERS OF FAMOUS MILK TRUCKS SPECIFY

Algometl

"Strength plus years of Service" is a construction principle with the manufacturers of Continental Divco milk delivery trucks. That principle is one of the reasons why the list of Divco fleet owners includes such names as Borden Farm Products Company, New York; Borden-Wieland, Inc., Chicago; Adohr Milk Farms, Los Angeles; and the Franklin Co-Operative Creamery Ass'n, Minneapolis.

The excellence of their product has just brought Divco the largest single order for milk delivery trucks ever placed by one concern—300 trucks for Borden & Company.

To insure "Strength plus years of Service" in body panels, together with the minimum weight which protects fuel saving, Divco specifies ALGOMETL (which is Algoma Plywood sheathed in metal) for doors, side and end panels.

We guarantee the same adaptability and satisfaction for transportation vehicles of every description with these ALGOMA products:

DURAPLY—finest resin-glued plywood that experience, quality materials and modern hot-plate presses can produce. *For roofs.*

ALGOMALOID—structural plywood corresponding to Duraply specifications. *For floors.*

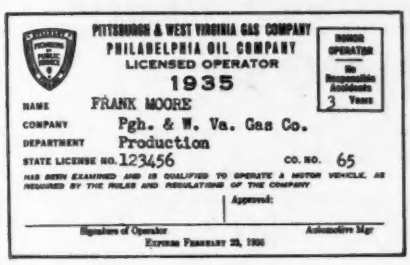
ALGOMETL—wood combined to steel, superior to any other metal-faced plywood. *For side panels and doors.*

Competent engineering cooperation in the solution of all structural problems involving plywood — without obligation. Write us.

— TECHNICAL DIVISION —
ALGOMA PLYWOOD & VENEER COMPANY
228 NORTH LA SALLE STREET
CHICAGO
FACTORY, ALGOMA, WISCONSIN

sages on vehicle dashboards, are unobtrusively emphasized by daily repetition. Letters to department heads, the circulation of currently interesting general articles or facts, articles in company magazines—all serve a good purpose. Also, concurrent preventive and corrective measures should be carried on to assist drivers. It would also be helpful to keep such records as degree of severity, miles per accident per individual employee, months of operation per vehicle per accident, accidents per 100 vehicles of each type per year, proportion of accidents by days of the week, time of day and age groups.

THE fact has been firmly established that motor vehicle defects are responsible for only about 10 per cent of all


PITTSBURGH & WEST VIRGINIA GAS COMPANY
PHILADELPHIA OIL COMPANY
LICENSED OPERATOR
1935

HONOR OPERATOR — No Preventable Accidents 3 Years

NAME FRANK MOORE
COMPANY Pgh. & W. Va. Gas Co.
DEPARTMENT Production
STATE LICENSE NO. 123456 CO. NO. 65
HAS BEEN EXAMINED AND IS QUALIFIED TO OPERATE A MOTOR VEHICLE, AS REQUIRED BY THE RULES AND REGULATIONS OF THE COMPANY
Approved:
Signature of Operator — Automotive Mgr
EXPIRES FEBRUARY 29, 1936

Safe drivers receive "honor" license to drive company vehicles. Drivers consider it their highest award

accidents. This percentage is less in well maintained fleets. The other 85 or 90 per cent of accidents are due to human errors. If every one drove an automobile with as much care and courtesy as is exercised when walking down the street, accidents would be few. This does not apply to all drivers. It is less applicable to fleets in which safe operation is stressed. By experience and accomplishment, utility companies are well equipped to take a prominent part in the fast crystallizing public determination that the highways must be made safe.

Is our house in order?

Traffic Dictionary

We have reviewed "Traffic Dictionary." It is a "compendium of domestic and foreign trade and shipping terms, phrases and abbreviations." In case you are interested a "Truck Master" is none other than "a truck driver." And "Bills Receivable," in which we know you are interested are "bills and notes made by others and payable to ourselves." Each alphabetical group is followed by a list of abbreviations and their meanings. A handy volume, if you ask us and even if you don't, and the place to get it is Shipping Service Organization, 2040 Grand Central Terminal Bldg., New York City.

Here's a proposition we know will look good to you.

Every model in this outstanding and complete line of hydraulic jacks is *built right* and *priced right*.

No matter whether you are operating light delivery cars or heavy trucks and trailers—there are Hein-Werner Hydraulic Jacks that are ideal for your service needs on the road or in the shop.

These jacks are exceptionally compact, sturdy, easy to operate and SAFE . . . It is impossible for one of these to lower accidentally, because handle must be removed from pump to open release valve. All are tested at 1½ times their rated capacity, and are designed for hard, dependable service.

For light delivery cars we offer the "Bullet," 3,000 lb. capacity at $2.80 . . . For light trucks 3 ton models at $7.95 . . . 5 ton models at $9.95 . . . 7 ton capacity jacks at $13.45, and for heavy trucks and buses a 12 ton jack at only $19.95.

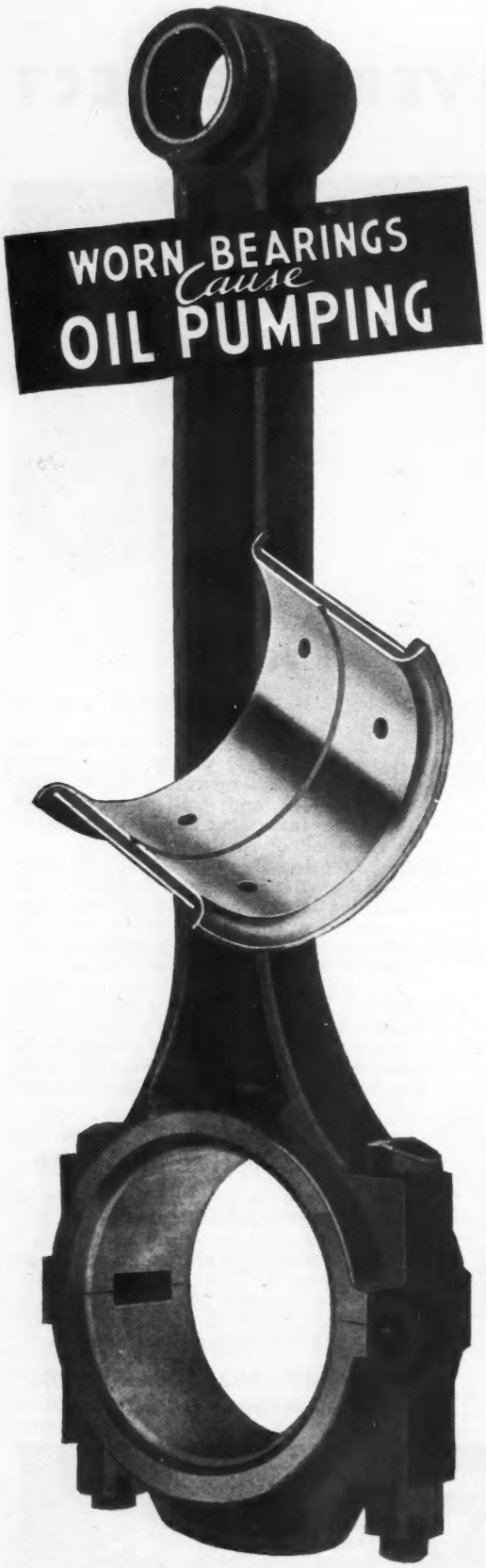
New 20-Ton Model
Only $30.00 Net to Dealer

In response to popular demand, and in keeping with our policy of producing a quality product to sell at a price that leaves no room for argument—we present our new 20 Ton Model Hydraulic Jack, priced at only $30.00.

All prices indicated are net to dealer, and are slightly higher West of Denver.

HEIN-WERNER MOTOR PARTS CORP.
WAUKESHA, WISCONSIN

FEW MODELS ENGINEERED TO DO THE WORK OF MANY
HEIN-WERNER
hydraulic JACKS



Endorsed!

•

A NEW MONEY-SAVING MAINTENANCE PRACTICE

•

Service Men Agree that OIL CONTROL *starts at the* BEARINGS*!*

IT IS now standard practice in many maintenance departments and in service shops everywhere to check the main and connecting rod bearings on all engines opened up for correction of oil pumping. This improved shop practice saves money for operators, because formerly so many jobs got new rings, pistons or cylinder reboring and still pumped oil.

Today, maintenance men agree that oil control starts at the bearings. As one manager stated, "... every man in contact with motors should add that valuable information to his bulletin file." The fact that practically all oil in suspension in the crankcase is thrown off at the main, rod and cam bearings suggests that oil control should start at these points.

Oil pumping costs money. It causes excessive carbon, fouled plugs, plugged oil ring slots, dangerous fumes and sluggish engine performance at all times. When you find worn bearings, replace with Federal-Mogul insert precision-type bearings, or rods babbitted by Federal-Mogul. They are *engineered* products, mechanically and metallurgically *right* for the job of oil control. Federal-Mogul bearing replacement service is COMPLETE and quickly available everywhere.

FEDERAL-MOGUL CORPORATION

OPERATING WATKINS BABBITTING SERVICE

DETROIT • MICHIGAN

Federal Mogul

Only Complete Bearing Service

122F UNIVERSAL PARTS, INC., offer a source of supply for guaranteed replacement parts for your Mack truck Fleet. Check the post card and see page 122.

122G HANDY GOVERNOR CORPORATION. Checking post card brings you information on Handy Governors, Air Cleaners, and Oil Filters. See page 122.

122H How's your Spray-Painting Equipment? Exhaust Systems? Compressors? Oil Guns? Check post card for the new DEVILBISS catalog. See page 122.

123 Ever hear of spark plugs which can breathe? STANDARD SPARK PLUGS do! Read about these DIFFERENT plugs on page 123, and check post card for specifications.

124 EDWARDS IRON WORKS, INC — A new DeLuxe Van Trailer, completely streamlined, rounds out the Edwards line. It is designed for cab-over-engine tractor. Durable, yet of low cost. See page 124. Check the post card for literature.

125A A lot of real advantages will be found on page 125, in connection with the BLOOD BROTHERS new "Series N" Needle Bearing Joints. Check post card for details.

125B SIMMONS MANUFACTURING CO. Page 125 shows a pair of husky jacks. "They ask no favors and expect none." Just two of a family of sixteen! Check post card for catalog.

126A LITTLE GIANT PRODUCTS, INC. Here's a heavy-duty, 2-speed hand hoist. Sells for less than half power-type. Capacity four tons. See page 126. Check post card for details.

126B A free sample of ALUPAK HEAD GASKET will be mailed you if you check post card and mail coupon on page 126. Made by FELT PRODUCTS MFG. CO.

126C You can save 40% by using AHLBERG GROUND BEARINGS. Read how on page 126. Check post card for "The Story of Ahlberg Ground Bearings."

126D THE K-D LAMP COMPANY. An approved commercial vehicle flare—more than meeting specifications. Page 126. Check post card for details.

127A ACME SIX WHEELER COMPANY—Here is a husky, guaranteed unit which makes a 5-8-ton truck out of any light chassis! Extra payload at very little increased operating cost. See page 127. Post card has space for checking.

127B KINGHAM TRAILERS and BODIES are factory built in a single unit — give added strength and added appearance. See page 127. Check post card for full particulars.

127C THE BEAURLINE FOUNTAIN BRUSH is guaranteed to cut your fleet-cleaning costs 1/3rd or your money returned. See page 127 for offer. Check post card for further information.

127D Do you depend upon exhaust smoke to tell you when adjustments are necessary? CAMBRIDGE EXHAUST GAS TESTER, WHILE RUNNING ON THE ROAD, will give positive data, and keep you out of legal penalties. See page 127, and check post card.

128A DO-RAY Signal and Safety Lamps and Products are good, reliable items of equipment—built to last. See page 128, and check post card for catalog.

128B GAR WOOD builds telescopic Truck Hoists for heavy duty work—and builds them to last. Complete catalog (brand new) mailed if you check post card. See page 128.

128C THE HYGIENIC PRODUCTS CO.—A free sample can of Sani-Flush will be sent to you as convincing proof that it will quickly clean out a truck's cooling system. Removes all traces of anti-freeze, rust, scale and sediment. (Page 128.) Write direct or check card for free sample.

129A Now you can have custom-built truck bodies at STANDARD prices. MASTERCRAFT BODIES are built to individual specifications on a mass production plan. See page 129. Check post card for further details.

129B Flower City Specialty Company offers Free samples of famed SELF-CLOSING MONKEY-LINKS to all Fleet Operators. They save time and money. See page 129. Check post card for yours today.

129C ENSIGN CARBURETOR COMPANY, LTD. An extra-heavy-duty carburetor to step up performance and increase efficiency of severely treated trucks. 5 sizes. Post card brings information. See page 129.

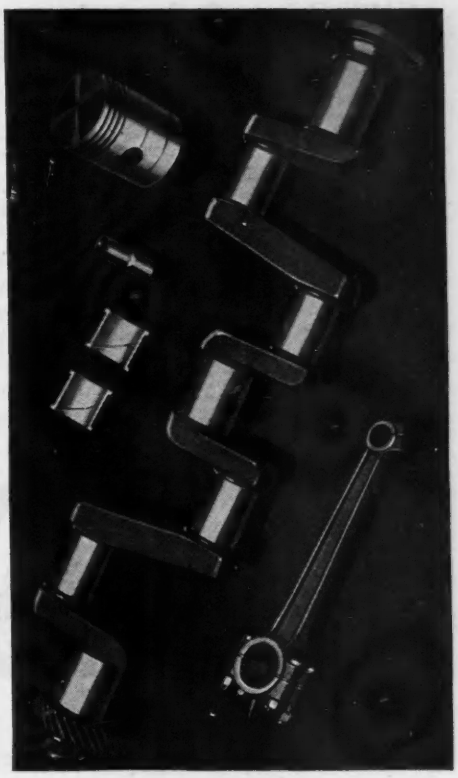
129D HANDY HOIST has Power, Speed and Strength for every need. See Alloy Steel & Metals Co., page 129. Check post card now for details of this all-purpose winch.

129E TURNSIGNAL Corp. presents an ELECTRIC FLARE that generates its own current, costs little and is dependably sure. See page 129. Check post card for full details.

129F SIMPLEX Mollum PISTON RINGS in many fleets are cutting down engine wear; keeping trucks on the road longer. See page 129. Check post card for full details.

131 Don't forget to put a check alongside the LONG MANUFACTURING COMPANY item on the post card. It will bring you details of a mighty fine line of clutches. See page 131.

132 At 40 deg. below zero—"the CUMMINS-DIESEL gave no trouble of any kind." It hauled a 67-ton payload and plowed its own road through the snow. Read the story on page 132. Check the post card for a copy of "Read the Record."



For Fleet Protection

The vitals of the modern automobile engine must function under increasingly gruelling conditions. Protection of these parts is essential.

Fleet owners should be especially interested in seeing that their trucks go out with every precaution taken to insure good performance.

An important step in this direction is the use of an adjunct oil containing "dag"* Brand colloidal graphite. No matter how carefully machined, ground or honed the friction parts have been, they are still surprisingly rough. With the use of Acheson's colloidal graphite, a smooth, self-lubricating graphoid surface is established on the parts. This surface reduces metal-to-metal contact during cold starting and when oil film rupture occurs due to high temperatures and heavy pressures.

Write for Bulletin S242 discussing the use of this material with alloy bearings.

*Reg. U. S. Pat. Off.

REG. U.S. dag PAT. OFF. COLLOIDAL PRODUCTS

ACHESON COLLOIDS CORPORATION

FOUNDED [1908] AS ACHESON OILDAG COMPANY

PORT HURON • MICHIGAN

GMT Struts Style and Pares Prices

(CONTINUED FROM PAGE 31)

stroke, 238.9 cu. in. displacement, rated 81 hp. actual at 3000 r.p.m. governed speed. Maximum torque 170 lb. ft. at 1000-2000 r.p.m

The "257" engine is a valve-in-head, six-cylinder, 3 7/16-in bore x 4⅝-in. stroke, 257.5 cu. in. displacement, rated 87.5 hp. actual at 2800 r.p.m. governed speed. Maximum torque 190 lb. ft. at 800-1600 r.p.m.

The "286" engine is a valve-in-head, six-cylinder, 3⅝-in. bore x 4⅝-in. stroke, 286.4 cu. in. displacement, rated 90 hp. actual at 2600 r.p.m. governed speed. Maximum torque 205 lb. ft. at 1000-1800 r.p.m.

THE "239," "257," and "286" engines are new models and all have the following important features in common: full pressure lubrication with rifle-drilled connecting rods; oil filter, oil bath air cleaner of self-washing type; heavy crankshafts with integrally-forged counterweights and external torsional balancer; heat-treated aluminum pistons with floating wrist pin, alloy exhaust valve seats; automatic heat control for intake manifold with control valve which deflects exhaust gases around the intake during warming-up; packless water pump with a spring controlled carbon ring replacing the usual packing and adjusting nut; air-cooled, 100 watt generator.

The "331" and "400" engines which remain unchanged are both six-cylinder valve-in-head types. The "331" develops 94 hp. actual at 2500 r.p.m. governed speed and 230 lb. ft. torque at 800-1400 r.p.m. The "400" develops 110 hp. actual at 2300 r.p.m. governed speed and 296 lb. ft. torque at 800-1600 r.p.m. Both have Stellite-faced exhaust valve seats.

THE following is a brief list of special chassis features of the various models:

T-14—126-in. wheelbase, nominal length of body back of cab is 7 ft., synchromesh three-speed transmission, semi-floating rear axle with torque tube drive, GMR hydraulic brakes with 168 sq. in. of lining area, worm-and-ball bearing sector steering gear.

T-16—wheelbase 131 and 157 in., maximum body lengths back of cab are 9 and 12 ft. respectively, GMR hydraulic brakes with 337 sq. in. lining area, heavy-duty, four-speed transmission mounted on ball and roller bearings, full-floating rear axle with spiral bevel drive and straddle-mounted pinion and steering gear of roller bearing worm type.

T-16H—wheelbase 139½, 163½, 181½ in. and same features as T-16 except use of T-18 rear axle, springs and brakes.

T-18—wheelbase 136, 160, 178 in., clutch is now 11 in. in diameter with ball throwout bearing, larger steering gear with 18 to 1 ratio, heavier frame with deeper side rails are improvements over the previous model.

T-18H incorporates all the features of the T-18 combined with the T-23 rear axle, rear brakes, and springs. Wheelbase range same as T-18.

T-23—wheelbase 136, 160, 178, 196 in. Clutch is 12 in. single disc, non-shock loading forced pressure type having a large number of clutch release fingers equally spaced around the pressure plate. When disengaged, the fingers lean forward and any tendency to engage, while the engine is racing, creates a strong centrifugal force tending to move the finger further forward, and out of engagement. After engagement, the inner ends of the fingers are inclined to the rear of the unit and as truck speed increases, centrifugal force tends to push the fingers further back, thus increasing the pressure of the disc in proportion to the driving torque. This type of clutch, except for size, is

TRUXMORE

WORLD'S BEST 3RD AXLE

300,000 MILES

This Truxmore Axle has already run about 75,000 miles on each of four different trucks.

Truxmore's sturdy construction produces the same long life expected of any good trailer.

Truxmore Axles will reduce your hauling costs (easily $1,000 per year per truck), while the price of each 3RD Axle will be spread over several trucks, just as with trailers.

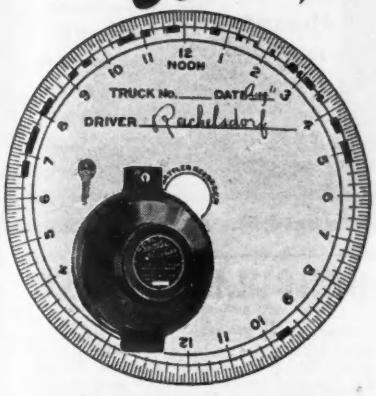
We Make Both Trailers and 3RD Axles
Write for Unbiased Facts . . . . . .

New York
Syracuse, N. Y.
Binghamton, N. Y.
Rochester, N. Y.
Erie, Pa.

1791 FILLMORE AVE.
TRUCK EQUIPMENT CO. INC.
BUFFALO, N.Y.

Chicago, Ill.
Philadelphia, Pa.
Pittsburgh, Pa.
Boston, Mass.

The Sattler Recorder



A perfect record of each truck's stops!

Enables you to check up on each truck after every day's run. Tells if rerouting is necessary, etc. Inexpensive. Entirely self-contained. No connections of any kind.

HANS SATTLER
Sheboygan, Wisconsin

Black Diamond
ALL-RUBBER SEAT CUSHIONS
New, Improved Design for All Makes of Trucks Gives Still Greater Economy

Now Karpex offers to truck fleet owners seat cushions and back rests that are believed to be unequalled anywhere. New refinements in the famous exclusive diamond grid construction have made for even greater comfort and less upkeep expense than ever before. Discover for yourself the many advantages of these cushions. Made to fit any size or shaped cab. Write for complete details and prices.

KARPEX MANUFACTURING CO.
1424 E. 19th St., Indianapolis, Ind.

PER-MAX
the Permanent
TRUCK FINISH

Ask for list of prominent fleets successfully using PeR-Max. We will send one pint of black for test if you will write us giving the size of your fleet.

RINSHED-MASON COMPANY
Manufacturers of Automotive Finishes
5835-71 Milford Street, Detroit, Michigan

used on all models from T-23 up. Brakes are hydraulic with vacuum power 342 sq. in. lining area. Heavy duty four-speed transmission with constant mesh helical gears full-floating rear axle.

T-23H is similar to the T-23 except for the rear-end assembly which is the same as on T-33.

T-33—wheelbase 136, 160, 178, 196 in. Brakes are hydraulic with vacuum power, air-operated Timken brakes with adjustable levers are optional at extra cost. Full floating rear axle, four-speed heavy duty constant mesh helical gear transmission, non-shock loading, forced pressure type clutch.

T-33H is similar to the T-33 but combines its features with the rear-end assembly of the T-46.

T-46—wheelbase 136, 160, 178, 190 in. Standard engine is the "331" and incorporates 13-in. clutch of non-shock loading forced pressure type. Five-speed under drive transmission with constant mesh helical gears is standard; five-speed overdrive transmission with silent third and over drive is optional at extra cost. Hydraulic brakes with vacuum power are standard, air brakes available at extra cost.

THE T-46 is also available with the "400" engine option which includes the larger engine, a 14-in. clutch, and the next larger five-speed overdrive or underdrive transmissions, larger radiator core and driveshaft.

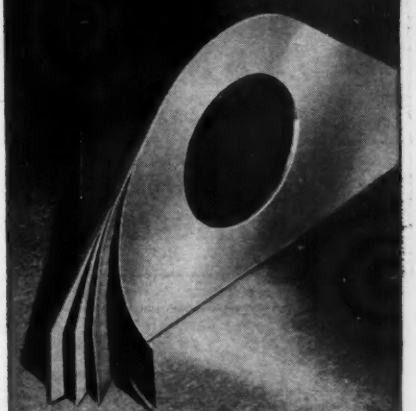
T-61—wheelbase 136, 160, 178, and 196 in. Air brakes are standard with Westinghouse at the rear with slack adjusters and Timken at the front with adjustable levers. Clutch is 14 in. non-shock loading forced pressure. A variety of transmission options is offered. The heavy-duty, five-speed overdrive transmission is standard while the five-speed underdrive is optional. In addition, it is possible to specify as optional equipment a combination of a four-speed transmission with a three-speed constant mesh helical gear auxiliary transmission for heavy duty work where 12 forward speeds may be desirable. Full-floating double reduction axle is standard.

T-61H is similar to the T-61 except for larger rear springs and heavier double reduction axle as standard equipment. Both the T-61 and T-61H are offered with the "450" power plant option.

Fred. C. Fiechter

Fred Fiechter, 51, fleet maintenance superintendent of John Wanamaker, Philadelphia, died recently of a heart attack while on his way to Bermuda. Mr. Fiechter was a mechanical engineer and one of the foremost fleet transportation men in the country.

P-e-e-l yourself more profit in bearing adjustment!



SIMPLY P-E-E-L .002" or more at a time. No miking . . . No filing!

Modern bearings require modern precision standards. Laminum, the solid shim that p-e-e-l-s for adjustment, makes precision adjustments profitable! Standard in leading gasoline, diesel, oil and gas engines.

LAMINATED SHIM COMPANY, INC.
MFRS.: LONG ISLAND CITY, N. Y.

LAMINUM

FEDERAL-MOGUL CORP.
DISTRIBUTORS: DETROIT, MICH.

THE WORLD'S FINEST
ALL-WHEEL-DRIVE TRUCKS*
ARE BUILT BY
MARMON-HERRINGTON
Factory and General Offices: Indianapolis, Indiana

*The new line of Marmon-Herrington All-Wheel-Drive Ford V-8 models and the recently expanded line of regular Marmon-Herrington four and six wheel-drive units.

BAKER
SPECIALIZED COMMERCIAL
BODIES and CABS
The BAKER-RAULANG CO.
BODY DIVISION
Foot of West 80th St.
Cleveland, Ohio

Series 900
WALKER
Hydraulic Jacks
Give you extra value features for car, truck or bus equipment and heavy duty bench work or shop jobs. One of ten sizes—capacities 1½ to 20 tons—at left. Order from your jobber—and see the complete line of Walker Jacks for every service need.
WALKER MFG. CO.
Racine, Wisconsin

Motor Tune-Up
is a real profit and business building service.
Send for free Tune-Up Charts
CARTER CORP.
CARBURETOR
2834-56 N. Spring Ave.
St. Louis

OSHKOSH
4 Wheel Drive Trucks
A proven product. 1½ to 10 ton capacity. Write for complete information.
OSHKOSH
Motor Trucks, Inc.
Oshkosh, Wis.

New Products On Parade

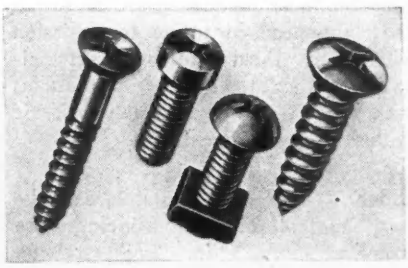
(CONTINUED FROM PAGE 42)

Tube Vulcanizer

LAS-STIK electric tube vulcanizer operates on either DC or AC current and reaches a curing temperature in two minutes. A feature of this device is the arrangement of the two heating elements. When the vulcanizer is first plugged in, the high heat element quickly brings the plate up to vulcanizing temperature. At this point a thermostat automatically cuts out this element and the second or vulcanizing element holds the temperature. Las-Stik Mfg. Co., Hamilton, Ohio.

Phillips Screws

A FEATURE of the new Phillips screws with the recessed heads, a product of the American Screw Co. of Providence, R. I., is that they will stay on the point of the screw driver, which is a great aid when driving in inaccessible places. In place of the conventional cross slot these screws



have a tapered recess in the head which exactly fits the tapered end of the special driver.

Only four sizes of drivers or bits are necessary to drive the entire range of screw sizes, and two sizes of drivers fit the range most commonly used. Phillips bits are available for either power or manual drivers. Utility kits containing drivers and several sizes of wood screws are offered for trial to new users.

Powell Mufflers

POWELL MUFFLER CO., 729 Broad St., Utica, N. Y., claims its mufflers to be blow-out proof due to their construction. The shell is electrically welded the full length forming a jacket similar to a welded tube. The baffles are also securely welded into place. The improved U-type interior arrangement is said to

DEPENDABLE!
If you want air-brake dependability, write to the Hays Corporation, Michigan City, Indiana, for literature describing this new husky wiper that slashes through clotted mud or snow with the 100-lb. kick of the air-brake supply behind it.

AIR-PUSH

TIMKEN BEARING SERVICE
Use genuine Timken Bearings for replacements. Look for the name "TIMKEN" stamped on every cup and cone.
THE TIMKEN ROLLER BEARING SERVICE & SALES CO., CANTON, O.

HERCULES POWER
Hercules engines, both gasoline and Diesel, have long been standard equipment on many leading makes of trucks, truck tractors and delivery units as well as urban and interurban buses, road building and maintenance equipment, industrial, oil field and agricultural machinery. Hercules provides an engineering service which includes a study of specialized power applications.
HERCULES MOTORS CORPORATION
Canton, Ohio, U.S.A.
America's Foremost Engine Manufacturer
Power Plants from 4 to 200 HP.

You Can't Fool the Factories..
They know what's best for production and service. That's why 32 leading factories and thousands of service shops have adopted ECCENTRIC Valve Seat Grinding. You can't go wrong on service equipment if you follow the factories. Ask your Jobber.
O K'd
ECCENTRIC VALVE SEAT GRINDER

ALCO
FOUR WHEEL DRIVE
Converts your Ford or Chevrolet truck into a RUGGED, POWERFUL FOUR WHEEL DRIVE able to do the job with ease where much heavier trucks fail, and at a fraction of the cost.
Write
ALMA MANUFACTURING CO.
ALMA, MICHIGAN

Write Today for Full Information About

SPONGEX

GRID CONSTRUCTION

Seat Cushions or Fillers

All Sponge Rubber Construction
Cheaper Than Springs • The Most
Comfortable Cushion Ever Made

Address Dept. C

SPONGE RUBBER PRODUCTS CO.

DERBY CONN.

3 MATERIAL ADVANTAGES

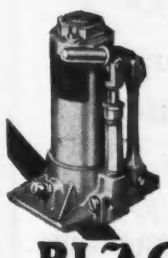
HASKELITE
ROOFS

PLYMETL
PANELS

PHEMALOID
FLOORS

HASKELITE MANUFACTURING CORPORATION
208 W. WASHINGTON ST., CHICAGO, ILL.

SURE-FIRE POWER



A sure - enough light-heavy, this Blackhawk AA8.5! 4¼ ton capacity. 8⅛" low, 17⅛" high. Handles any truck in intermediate class. Fast, reliable, with smooth, EASY lifting — like all Blackhawk Hydraulic Jacks. Ask your Jobber Salesman. Write for literature.

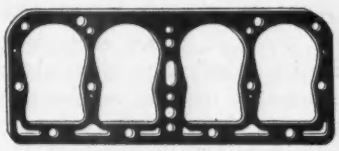
BLACKHAWK MFG. CO.
Dept. CJ-2 Milwaukee, Wis.

BLACKHAWK

satisfactorily muffle the exhaust sound without sacrificing power.

Cylinder Head Gaskets

COOPER Ferrobes gaskets are fabricated from steel and treated asbestos. A steel sheet is die treated, producing a multiplicity of ingenious barbs on either side, after which a sheet of asbestos is permanently anchored to both sides of the



steel core. These gaskets are said to be very compressible, and yet cannot be blown out as the steel stands high temperature without deterioration, and the barbs hold the asbestos rigidly in place. They are a product of the Cooper Mfg. Co., 411 S. First Ave., Marshalltown, Iowa.

Battery Puller

FORGED STEEL PRODUCTS CO., Newport, Pa., has added a battery terminal puller to its line of vacuum grip pliers. This tool enables a mechanic to quickly and easily remove a corroded cable terminal that has "frozen" to the battery terminal. The jaws, which are shaped like a two-pronged fork, slip under the terminal and a simple movement of the handle exerts a powerful upward pull.

Valve Grinder

THE Weber Tool Mfg. Co., 4140 Whiteside Ave., Los Angeles, Cal., has developed a valve seat grinder driven at 15,000 r.p.m. by an air turbine. It employs an eccentric method of grinding. It can be used on the hardest seats and a positive feed is said to eliminate the danger of gouging.

Bolt Cutter

THE PORTER swivel head bolt clipper, product of H. K. Porter, Inc., 6 Ashland St., Everett, Mass., has a ball joint construction which permits the head of the tool to swing in a full 90 deg. arc. It will operate with the cutting at right angles to the handles and there is no loss of power regardless of the position of the head.

Shotters Heads Luce

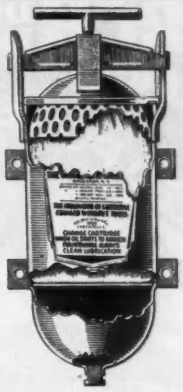
Frank A. Shotters was elected president of the Luce Mfg. Co., Lansing, Mich., at a recent meeting of that company.

THORNTON

Dual Ratio Four Rear Wheel

DRIVE
FOR TRUCKS!
Is setting new records

THORNTON TANDEM CO.
Detroit



W.G.B. CLAROFIER OIL

REGISTERED

MINIMIZE MOTOR MAINTENANCE

Cleans the oil and keeps it clean. Engine life doubled. Repairs cut in half. Water, road dust, grit and carbon entirely removed. Dilution and acid minimized. Cartridges replaced without tools. Costs less than 10 cents per thousand miles. Good oil when kept clean will last indefinitely.

WHY THROW IT AWAY?

Send now for full details today.

For

SUPERIOR SERVICE SATISFACTION

W. G. B. OIL CLARIFIER COMPANY
102 Greenkill Ave.,
Kingston, N. Y.

DOUBLE SAFETY | POSITIVE TRACTION | DOUBLE MILEAGE

McKay Multi-Grip Double-Bar-Reinforced Truck Chains

THE McKAY COMPANY
McKAY BLDG. PITTSBURGH, PA.

BURCH DUMP BODY HOIST

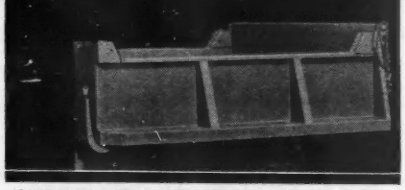
with BALANCED POWER FOR LOWERING OR RAISING

ONLY ONE MOVING PART

Balanced power for raising or lowering—automatic locking, any position—one moving part—no gears—no oil lines—no heating or foaming of oil. Plain and Braced Side Bodies—1½ and 2 Yard capacities.

FAST! POWERFUL!

Write for Literature



THE BURCH CORP.
Dept. F– CRESTLINE, OHIO

Sterling

QUALITY MOTOR TRUCKS POWERED WITH DIESEL OR OIL-BURNING ENGINES WILL INCREASE YOUR PROFITS

◆ ◆ ◆ ◆ ◆

Write For Facts

◆ ◆ ◆ ◆ ◆

STERLING MOTOR TRUCK CO., INC.
MILWAUKEE, WISCONSIN

Our Standard of Living

(CONTINUED FROM PAGE 23)

It is the desire of most of us to elevate our living to an even greater standard than we have attained in the past. There are still many things that we do not have, that we want to possess. Until all our wants are satisfied, "overproduction" must be considered in the class of bogies such as the "saturation point" whose ghost plagued the automotive industry for years.

The more abundant life will not be attained by political legerdemain. Punitive legislation, the bad laws written by bitter impulses, the prodigal plans of misguided political philanthropists won't elevate our standard of living. Those are still the menacing shadows on the future. The legislative dangers were signally emphasized by, of all persons, the President himself in his message to Congress. His meaning is cause for alarm. He said:

"In thirty-four months we have set up new instruments of public power in the hands of the people's government, which power is wholesome and appropriate, but in the hands of political puppets of an economic autocracy such power would provide shackles for the liberties of our people."

That is an appeal to sanction a benevolent autocracy. But, as Al Smith remarked, who wants an autocrat—even a good one?

No, the more abundant life, which we all deserve and can have, will not come from the top by way of a system designed by an individual. It will come by permitting the American Spirit of Enterprise to flourish, so that every American citizen by working and cooperating with his fellows produces more and more wealth of which we shall all enjoy an increasing share.

Cleaning Compound

A NEW compound for degreasing and cleaning pits, floors, engines, chassis, bodies, wheels and parts is being marketed by the J. A. Tumbler Laboratories, Baltimore, Md. It is called Hydrgre.

DeVilbiss

Spray-Painting Equipment—Spray Booths—Canopy Exhaust Systems—Exhaust Fans—Air Compressors—Hose and Hose Connections—Oil Guns.

Write for catalog

THE DEVILBISS COMPANY
TOLEDO, OHIO

Distributors or direct sales and service representatives available everywhere.

St. Paul
HYDRAULIC HOISTS and BODIES

There's a St. Paul Hoist to fit every need. Distributors conveniently located in leading distributing centers . . . stocked and ready to make prompt shipments.

St. Paul Hydraulic Hoist Co.
2207 University Ave., Minneapolis, Minn.

A Tight Connection All the Time

TRADEMARK
NOC-OUT
THE HOSE CLAMP WITH THE THUMBSCREW

Standard equipment hose clamp of the automotive and airplane industry. Your jobber has them

4307 W. 24TH PL. CHICAGO, ILL. **WITTEK** MFG. CO.

The complete line that completely satisfies

Fitzgerald Gaskets
THE FITZGERALD MANUFACTURING COMPANY
TORRINGTON, CONN.

MACK

(Replacement Parts)

We can show you a large saving on parts for your Mack Fleet. We specialize in guaranteed replacement parts for Mack trucks. *Write.*

UNIVERSAL PARTS INC.
6310 Penn Ave. Pittsburgh, Pa.

HANDY

Governors
Air Cleaners
Oilfiltors

"Standard Equipment"

HANDY GOVERNOR CORPN.
Detroit

NEWS

(CONTINUED FROM PAGE 44)

Stanley Steamers Soon

Stanley Steamers are going back into production, probably within the next 90 days, Harry W. Gahagan, president of Stanley Steam Motors Corp., successor to Stanley Steam Motor Carriage Corp., has announced.

According to the Stanley president the company will confine its present efforts to the bus field initially, later attacking truck problems and then the tractor field.

Compulsory Inspection in New York

New York will join the list of states requiring compulsory inspection of motor vehicles, if a bill now pending before the state legislature becomes law. By the terms of this bill, every motor vehicle registered in the state will be obliged to undergo a mechanical inspection in an authorized testing station twice yearly after Jan. 1, 1937.

Heil Body Has N. J. Plant

Heil Co., Milwaukee, manufacturers of steel dump truck bodies, hoists, tanks, and other automotive and industrial specialties, has acquired a large shop group at Hillside, N. J., for use in manufacturing and assembling operations for Eastern trade. The company will continue its Long Island warehouse, service station and semi-manufacturing plant.

Chevrolet Has Banner Year

Chevrolet Motor Co. announces that its total production of cars and trucks in 1935 was 1,066,196, making it the third largest year in the history of the company, and its fourth year to exceed 1,000,000 units in output.

Automotive Data Book Out in March

The 1936 edition of the Automotive Data Book, published by the Brake Lining Manufacturers' Association, Inc., will be issued in March. The book, distributed by the association without charge to the trade, gives complete details on brake linings and clutch facings used on all makes of automobiles and trucks.

Automotive Parts Co. Appeal Denied

In the suit of the Wisconsin Axle Co. vs. The Automotive Parts Co., which was appealed by the latter, a decision has been handed down which orders that the injunction issued by the District Court of the Northern District of Ohio enjoining and restraining The Automotive Parts Co. of Cleveland, Ohio, from making, using or selling bevel gear sets, axle shafts, or any replacement parts or elements usable for rebuilding axles made in accordance with Patent No. 1,571,801 and with Claim 2 of Patent No. 1,730,900, shall "stand and the cause be remanded with permission to the lower Court to modify the injunction upon the appellant's motion and the introduction of proofs showing that its sales are for the purpose of repairs and not reconstruction."

New Discovery Cools Tires

A new puncture-proof chemical discovery known as Airex has just been introduced by the General Tire and Rubber Co. Airex has been developed by Hans Wagner, and is being marketed through the Dutch Airex Corp. of America, Ltd., Akron. It is claimed that Airex makes tires run cooler and that it reduces the natural seepage of air through rubber.

Ditzler Ups James and Vivian

Charles E. James has been promoted to assistant sales manager and Lloyd R. Vivian was made assistant advertising manager of the Ditzler Color Co., Detroit.

Ford Parts Discount to Truckers

Ford Motor Co. announces that parts discount to fleet owners is 25 per cent on items where dealers receive maximum discount, 10 per cent on items where dealers receive 25 per cent discount and net price on net price items. These discounts apply when parts are purchased for use in the fleet's garage or when work is done at dealer's place of business.

Hollearn Back on Job

Frank J. Hollearn of Philadelphia is back on the road for Diamond T fully recovered from a gall bladder operation.

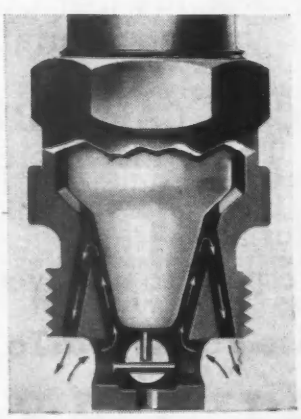
STANDARD SPARK PLUGS
WILL "BREATHE"

NEW ECONOMY INTO YOUR FLEET

Unbiased fleet tests prove that the new Standard *Ventilated* Spark Plug gives smoother, more efficient truck performance, lasts longer and needs less attention than conventional plugs. Fouling is minimized and cracked porcelains are positively unheard of.

PROTECTS THE SPARK

The important and patented difference in Standard Ventilated Spark Plugs is the Protected Spark. Its metal cover guards electrodes and porcelain from the terrific heat of explosion and from the carbon deposits usually formed. The gap is also protected and kept in adjustment. Better performance and longer plug-life result.



"BREATHES"

The breathing action cools and cleans the plug on each and every stroke of the piston through the ventilating holes.

1 TYPE—5 SIZES

Five plug sizes will service your entire fleet. There is only one type made. Its performance in your most difficult engine will satisfy you.

MAKE A CAREFUL TEST

Order a trial set or two immediately. In your most difficult truck they will convince you that Standard Ventilated Spark Plugs actually do cut costs and increase efficiency. Be your own judge. Write today.

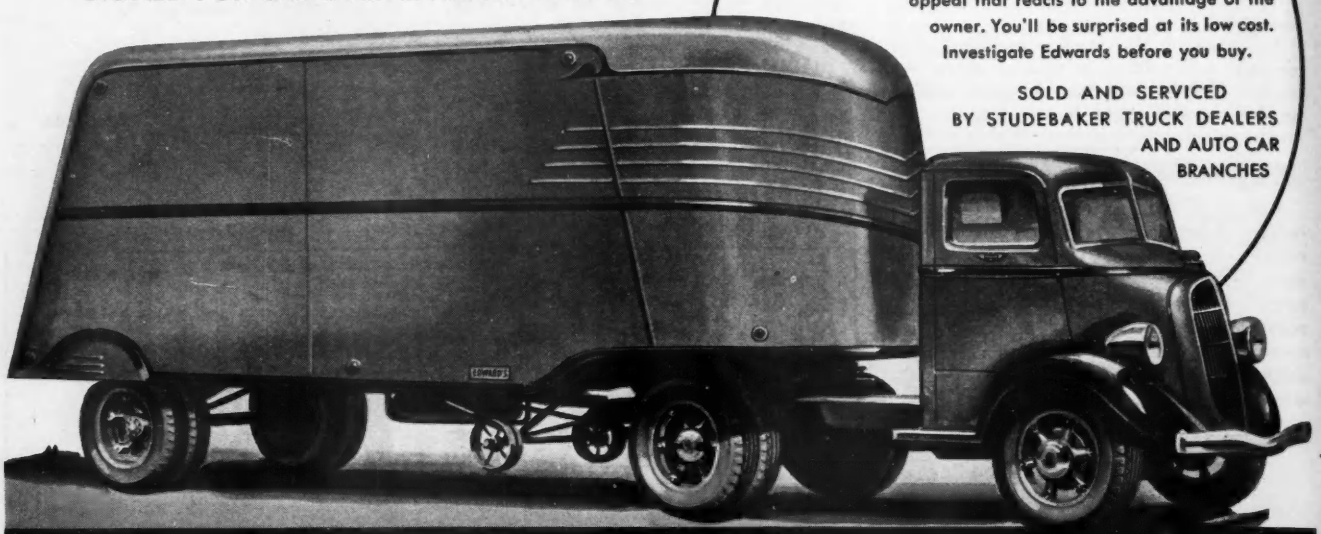
STANDARD SPARK PLUG CO.
4505 WAYNE AVE. PHILADELPHIA, PA.

THE NEW EDWARDS DELUXE VAN TRAILER

COMPLETELY STREAMLINED AND DESIGNED FOR CAB OVER ENGINE TRACTOR

TRUCKERS all over the world know from experience that Edward's has what it takes for lasting, low cost performance. Now Edwards steps ahead again with a semi-trailer built to fit the increasingly popular cab over engine tractors. Its beautiful streamlined appearance has eye appeal that reacts to the advantage of the owner. You'll be surprised at its low cost. Investigate Edwards before you buy.

SOLD AND SERVICED BY STUDEBAKER TRUCK DEALERS AND AUTO CAR BRANCHES



EDWARDS

EDWARDS IRON WORKS, INC., SOUTH BEND, INDIANA

QUALITY SEMI-TRAILERS

COMMERCIAL CAR JOURNAL

Advertising Increases 94%

That is the record for 1935, compared with 1934.

The reasons, of course, are that COMMERCIAL CAR JOURNAL has a circulation of 30,000 monthly—

That COMMERCIAL CAR JOURNAL has the largest and best Truck Fleet Circulation in the world—

That is leads editorially—

That its readers respond to its advertisers.

It's Always Wise To Tie Up To The Leader

COMMERCIAL CAR JOURNAL

A Chilton Publication

Chestnut & 56th Sts. Philadelphia, Pa.

Ten Below Zero!

Test data and photograph courtesy Electric Storage Battery Co.

THE

COMET DIESEL

•

STARTS "COLD"

EVEN IN

COLD WEATHER

•

● **Is the Comet Diesel easy to start when it is ten below? That was the question put to Waukesha engineers, and they passed it on to the testers in the ice box at the Electric Storage Battery Company laboratories. A complete series of cold weather starting tests was conducted . . . under every possible condition. All the results revealed by these tests are available in a new bulletin. Send for it. Learn what cold weather does to the viscosity of lubricating oil . . . how it affects the fuel system of a Diesel engine. That the Comet Diesel would start under extreme conditions was a safe surmise. Now the facts are known. When you write, ask for Bulletin 1013. *Waukesha Motor Company, Waukesha, Wisconsin.***

WAUKESHA ENGINES

THEY SAVED 2825 POUNDS *for Bonus-Load*

Actual weight of this truck-body is 2425 pounds. Built of Alcoa Aluminum by Olson Commercial Body Works, Chicago. Saving in weight, available for Bonus-Load: 2825 pounds.

What do we mean by Bonus-Load?

Bonus-Load is the pay-load you haul free, because of the weight-saving you make in the truck body by building of Alcoa Aluminum.

Which would you rather haul, Bonus-Load or ballast? Excess weight in bodies built of heavy materials is ballast, dead-head ballast. Nobody ever made any money hauling ballast around the country.

But Bonus-Load pays handsomely. Every man has his own peculiar trucking problems, his own way of computing costs, or of arriving at the best combination of engine, body, and chassis. But, however you figure, Bonus-Load is bonus.

National Tea Company earned themselves 2825 pounds of Bonus-Load when they built the body illustrated out of Alcoa Aluminum. Their weight-*saving* was greater than total weight of Aluminum body.

Whatever the type of body you need, you can get a profitable amount of Bonus-Load by specifying Alcoa Aluminum to your builder. We'll gladly co-operate with him in design or helpful fabricating suggestions.

ALUMINUM COMPANY OF AMERICA, 2139 Gulf Building, Pittsburgh, Pa.

ALCOA

ALUMINUM

ALCOA · ALUMINUM

this

you have ever used!

Marfak will cling to gear teeth the way it clings to your fingers. It won't channel, either, like ordinary grease that permits friction.

Under a revolving load such as occurs in a bearing under pressure Marfak liquefies and supplies fluid film lubrication. The Marfak remaining maintains a wall around the fluid section and acts as a seal to retain the fluid film in the bearing.

Hand-tests show what road-tests have proved

More bus-miles *are* being lubricated with Marfak . . . *right now* . . . than any other product of its type.

Because operators *compared* it with the grease they were using.

Get half a pound of any grease lubricant you consider mighty good.

Then take some Marfak in your hands.

"Work" it around till normal operating conditions are simulated.

Pull your hands apart to test its adhesiveness.

Try and spread your fingers apart, once they've been covered with Marfak.

Smear it across your palm and feel it cling.

Twist it and see it follow through.

Try to rub a clear space in the center of a bit of Marfak on your hand.

Then Try These Same Tests on Ordinary "Grease"

You'll promptly write an order for Texaco MARFAK and you'll never be satisfied with anything else. Get a drum and try it on one of your buses *today*.

THE TEXAS COMPANY

135 East 42nd Street New York City

Nation-wide distribution facilities assure prompt delivery

MARFAK

RESOLVED TO CUT OPERATING COSTS IN 1936 WITH Firestone GUM-DIPPED TIRES

ON TIME SCHEDULES

•

FASTER, MORE DEPENDABLE SERVICE

•

LOWER OPERATING COSTS

WHETHER you operate one truck or one hundred, decide now to lower your operating costs for 1936. Put Firestone Gum-Dipped Tires on every wheel. They will save you money and give you more dependable service.

The body of a Firestone Tire is built with Gum-Dipped High Stretch cords. That's why they run cooler and give you longer mileage.

The heavier, more rugged tread is securely locked to the cord body by two extra layers of Gum-Dipped High Stretch cords. These are patented Firestone construction features not used *in any other tire.*

Equip now with Firestone Gum-Dipped Tires and start cutting your operating costs today. The nearby Firestone Auto Supply and Service Store or Firestone Tire Dealer is ready to serve you.

Listen to the Voice of Firestone featuring Richard Crooks or Nelson Eddy—with Margaret Speaks, Monday evenings over Nationwide N. B. C. — WEAF Network

© 1936, F. T. & R. Co.

FOLLOW THE LEADERS FOR THEY KNOW THE WAY!

STANDARD IS AS STANDARD DOES

The men whom Standard Oil of New Jersey has sent to all parts of the world in quest of petroleum and of markets have impressed American efficiency on people of many races and colors. The methods and judgment of those men have bred confidence in Standard products . . . . "Standard is as Standard does" is true also here in America. Their prestige is founded on their skill in all things pertaining to their business.

They were the first to seek streamlined motor trucks and when, in that quest, they came to Autocar, they encountered for the first time an engineering vision that was willing and able to lock-step with them in producing a thing that was entirely new. Many streamlined Engine-under-the-Seat Autocars are now rolling in the great Standard fleet because Autocars provide economical stamina with distinguished good looks such as all discerning executives seek to associate with their enterprises.

AUTOCAR TRUCKS

THE AUTOCAR COMPANY, ARDMORE, PENNSYLVANIA

Take a Look at the Sales Made by a Few International Dealers in 1935

. . . Territory Is Still Open

THE PROOF of the opportunity provided by the International Truck franchise is in the sales records of the dealers. Here are but a few of the many hundreds of International dealers who are doing a successful business year in and year out. The size of the town doesn't count — Internationals are fast-selling trucks everywhere, as you will see from this group. Look over this list and then get in touch with our nearest branch for information on the franchise in your community. And remember, the International Truck line is complete—sizes range from the Half-Ton unit up to the powerful Six-Wheelers.

67 by E. Earl Shade, Winchester, Va.
51 by Cressona Auto Body Works, Cressona, Pa.
55 by Bush Service Station, Huntsville, Ala.
62 by O. M. Wold Farm Machine Co., Laurel, Mont.
153 by Orange State Motor Co., Tampa, Fla.
57 by Steinla Motor Co., Cumberland, Md.
55 by Younger's Motor Truck Co., Alexandria, La.
104 by F. B. Hart, Sacramento, Calif.
90 by Henry E. Martin, Lancaster, Pa.
71 by Bowman & Dennison, Dickson, Tenn.
61 by W. P. Hurst, Tyler, Tex.
65 by George W. Wayman, Covington, Ky.
54 by Markle Transfer Co., Glasgow, Mont.
70 by Cage Implt. Co. Corpus Christi, Tex.
59 by J. B. Hinson, Waycross, Ga.
138 by Simpson Motor Truck Co., Clarksburg, W. Va.
65 by Asaki Garage Auto Sales Co., Los Angeles, Calif.
162 by Quinn R. Barton, Inc., Jacksonville, Fla.
56 by Smith Motor Truck Co., Everett, Pa.
100 by Black Motor Co., Harlan, Ky.
78 by Omer Given, Charleston, W. Va.
162 by The O. S. Stapley Co., Phoenix, Ariz.
93 by Walter Hurst, Longview, Tex.
53 by Soledad Mercantile Co., Soledad, Calif.
94 by Planters Equipment Co., Cleveland, Miss.
57 by Big Sandy Motor Co., Paintsville, Ky.
68 by Matheny Motor Truck Co., Parkersburg, W. Va.
70 by Taylor Truck & Implt. Co., Montgomery, Ala.
82 by A. H. Karpe, Bakersfield, Calif.
59 by Anderson Motor Co., Inc., York, Pa.
71 by Glenn I. Connor, Longbeach, Calif.
103 by Delta Implt. Co., Greenville, Miss.
73 by Motor Truck Sales Co., Huntington, W. Va.
61 by Bays Motor Co., Clovis, N. M.
56 by George Berman, Pennsburg, Pa.
59 by W. D. Ingram, Tucson, Ariz.
54 by Drew Carriage Co., Ontario, Calif.
71 by Tate-Phillips Co., Winter Haven and Bartow, Fla.
95 by Valley Farm Equipment Co., Albuquerque, N. M.
51 by Russell Implt. Co., Alice, Tex.

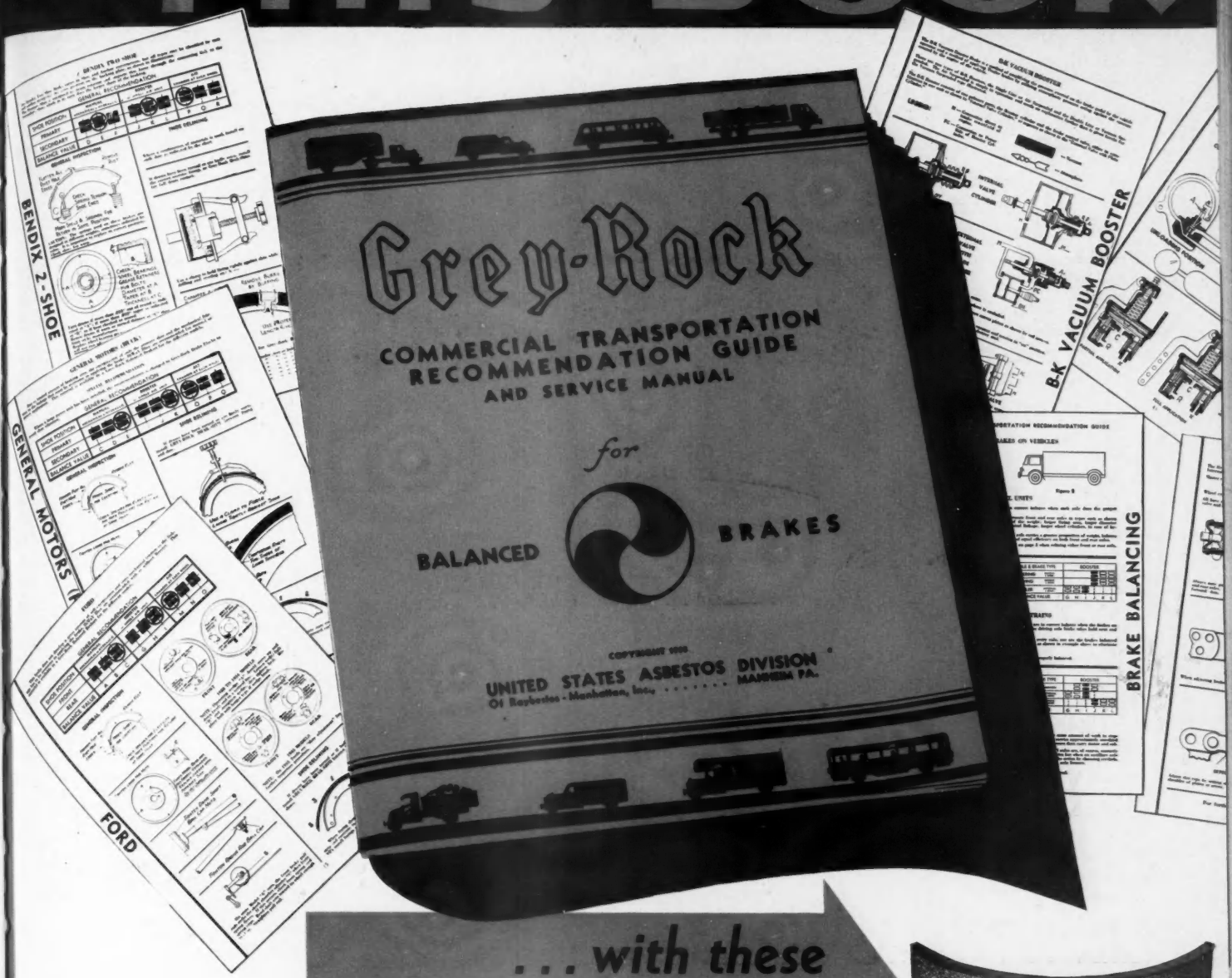
INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
606 So. Michigan Ave. Chicago, Illinois

International Trucks Tie Up with Another Live Wire

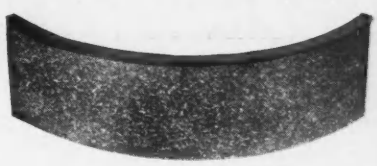
. . . "The March of Time" uses Half-Ton Internationals on its sound-and-camera expeditions on the trail of NEWS.

INTERNATIONAL TRUCKS

THIS BOOK



. . . with these TWO LININGS



Balances ANY Truck Brakes

Here is the first book ever published which tells the exact methods and materials for Balancing Brakes on *every* commercial vehicle—2-wheel, 4-wheel, 6-wheel or tractor-trailer—manual control, booster, or air brakes.

This book grew out of surveys by our engineers of 250,000 vehicles in actual field service. It covers over-loads, traffic and topography factors, drum-fade and all other braking problems. And these two Grey-Rock lining materials used alone or in combination as specified will Balance all truck brakes.

You can get a copy of this book from your Grey-Rock jobber or by writing to us. It is free. Ask for it. Give it to your shop foreman.

Grey-Rock BRAKE BLOCKS

The ideal in molded linings, ending fade, sluff-off, and high-temperature brittleness. They are so dense and strong that they require no backing and can be drilled deeper. All sizes and thicknesses. *Look for the orange edge.*

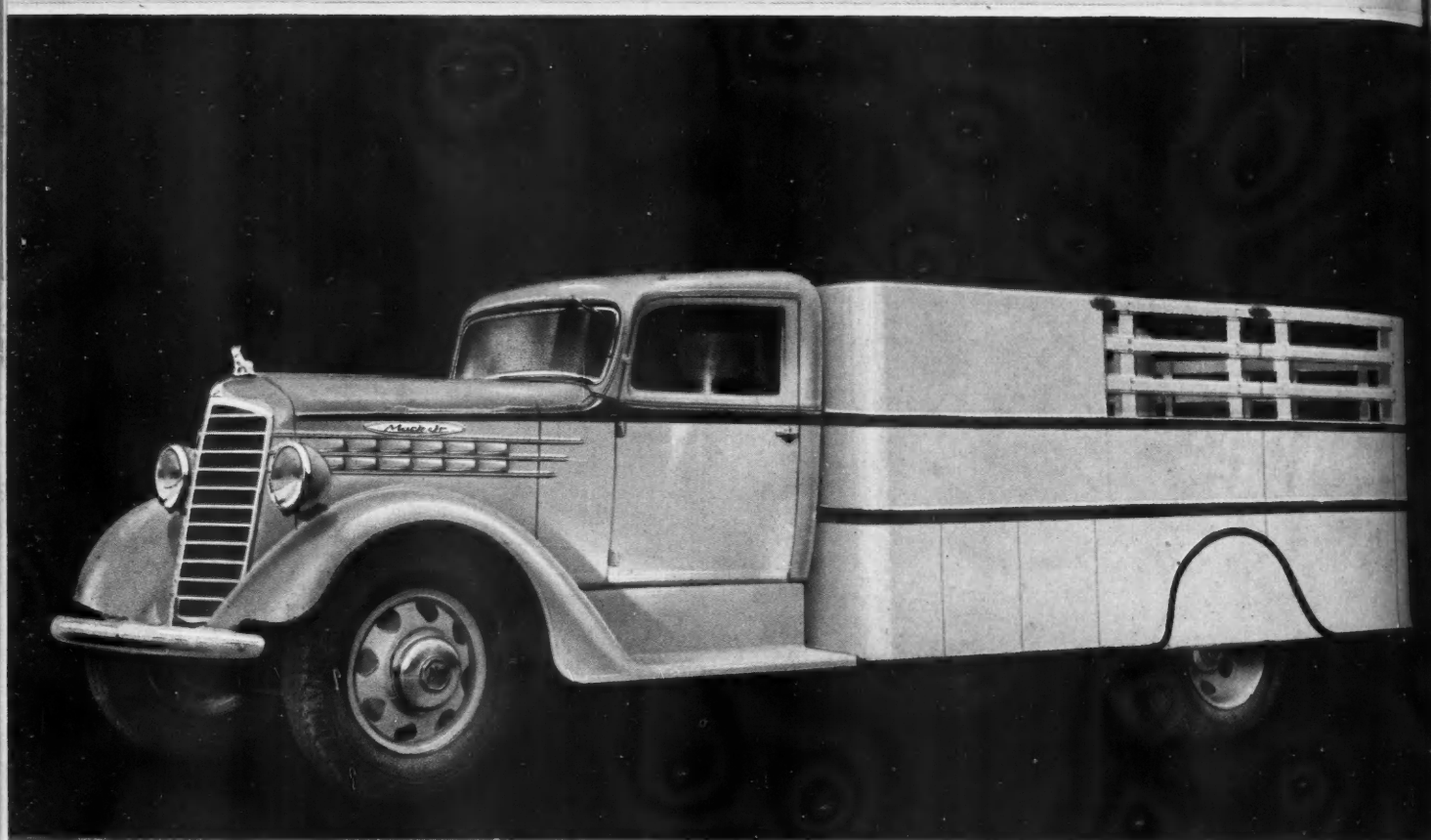
Grey-Rock HiWaY BLOX

Woven blocks, impregnated with wear-resistant compounds, then molded to within 4% of their compressible limit. They have the strength of woven linings, the long life and accuracy of blocks. *Look for the black edge.*

UNITED STATES ASBESTOS DIVISION *of Raybestos-Manhattan, Inc.,* **MANHEIM, PA.**

BRAKE LININGS • CLUTCH FACINGS • FAN BELTS • HOSE • PACKINGS • RELINING EQUIPMENT

Now—A COMPLETE L



New Low-Priced Mack Jr

HERE IS NEWS that changes the trucking picture for two-thirds of the haulers in America today.

First . . . it brings you low-priced equipment by America's foremost truck designers and builders. Second . . . it puts economy on an entirely new basis. Mack has always meant dependability, slow depreciation, low upkeep, unequalled operating economy per ton mile. It means these same things in the new Mack Jr. Finally . . . Mack Jr enables every hauler to command the advantages of Mack's unique, nation-wide service system.

Before you buy another low-priced truck, be sure to see the new Mack Jr.

MACK TRUCKS, INC., 25 BROADWAY, NEW YORK, N. Y.

7 MODELS

½ ton; 1½ tons (light service); 1½ to 2 tons; 2 to 3 tons. Also Mack Jr Buses in 3 Models and Mack Jr Fire Apparatus.

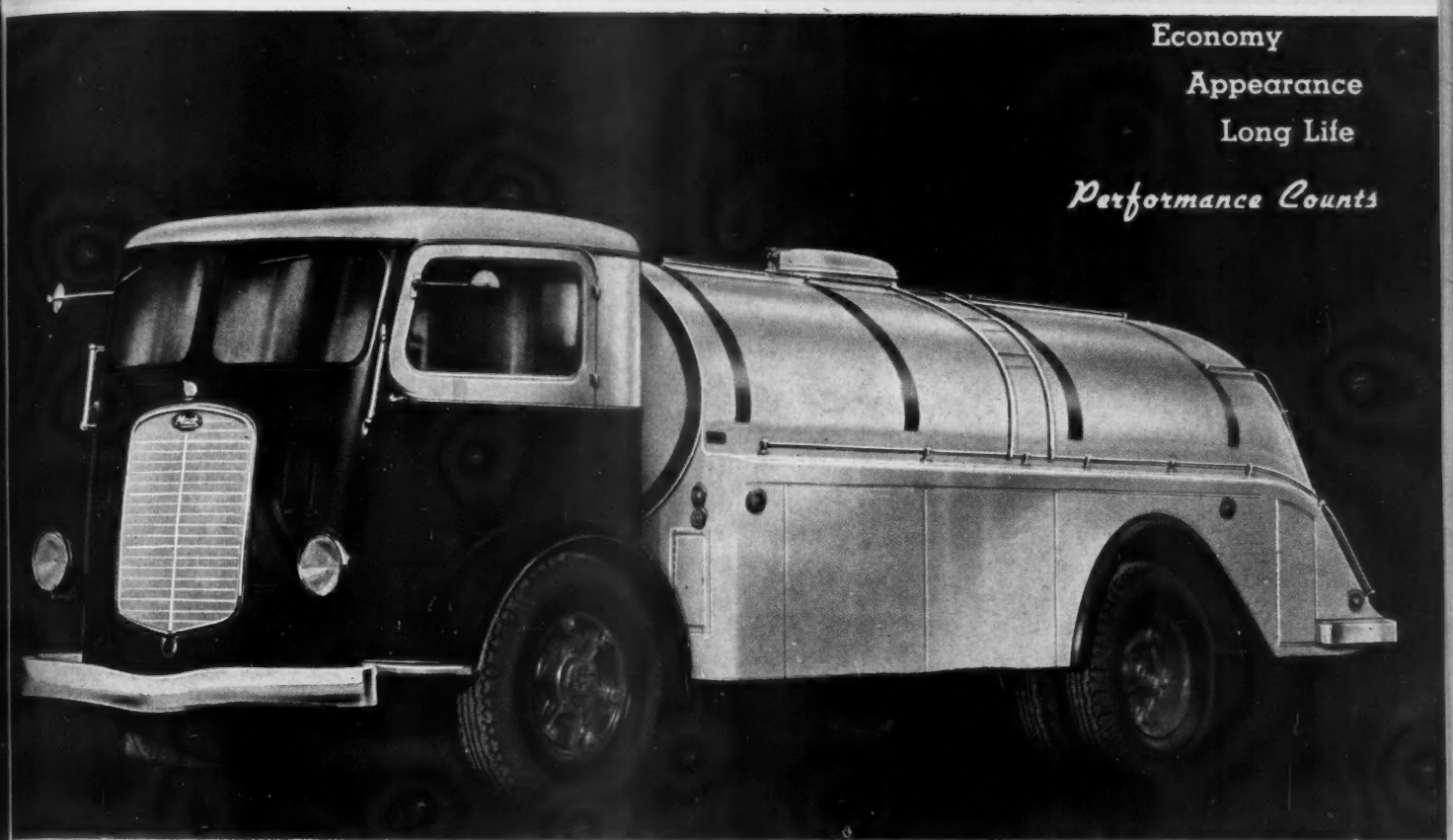
●

With the introduction of Mack Jr. the Mack line becomes the most complete in range of prices, models and capacities ever offered by one manufacturer in the automotive industry. Write for name and address of nearest branch or dealer.

$535.00 and up. Prices F.O.B. factory with standard equipment.

LINE...by Mack

Reliability
Economy
Appearance
Long Life
Performance Counts



...r New Traffic Type Macks

IN ADDITION to the new Mack Jr. Mack announces new Traffic Type Models of medium capacity . . . bringing the important advantages of Mack reliability, economy and long life to all haulers using this equipment.

Where limited maneuvering space or restrictions in legal length govern, these models offer longer load platform within a given overall length and considerably shorter turning radius. Beautifully styled cabs afford maximum road visibility and driver comfort.

The four models in the Mack Traffic Type line embrace the full range of gross weight capacities from 15,000 to 28,000 pounds and are made in wheelbases to accommodate bodies from 104 inches to 20 feet.

NOW . . . FOUR MACK TRAFFIC TYPE MODELS:

2 to 3½ tons; 3 to 4½ tons; 3½ to 5½ tons; 4½ to 7 tons. Also available as tractor chassis. Largest model as 6-wheeler, 2- or 4-wheel drive.

Mack

What Price Spark Plugs ?

In the operation of fleets of buses or trucks the true cost of spark plugs should be measured in terms of results on a bus or ton mile basis.

Champion Spark Plugs welcome any situation wherein efficiency over a mileage basis is the determining factor in the equipment used. In such cases we know Champions will earn the right to your business by doing a better job, over a longer period for less money.

Consider fouling, a major bugaboo in heavy duty service, where plugs are of inferior quality or incorrect type. The Extra-Range features of Champion Spark Plugs, by virtue of their patented design, *must* provide a greater heat range than any comparable spark plug of any other make. They are practically immune from fouling. These Champions are available in types for every engine and every operating condition.

While no field is more exacting in its demands than service in trucks and buses, neither is there any field wherein Champion engineering and research provides a more perfect answer, due to unequalled experience and almost daily contact with operations of every size and type, and under all conditions, throughout the nation.

If you have a major spark plug problem, Champion's factory trained representative in your territory will welcome an opportunity to consult with you. A line to us will put him in touch with you.

KELLY PETILLO—1935 Indianapolis 500 Mile Race winner, 1935 National A.A.A. champion and a new member of the Champion 100 Mile-an-Hour Club uses Champions exclusively. Also every divisional A.A.A. champion used Champion Spark Plugs to win their coveted ratings.

Champion

EXTRA-RANGE SPARK PLUGS

Use the Spark Plugs Champions Use

TO KEEP ENGINES YOUNG • TEST, CLEAN AND REPLACE SPARK PLUGS AT REGULAR INTERVALS

FLEET OWNERS KNOW THAT V·8 ECONOMY IS OVER-ALL ECONOMY

EVERY trucking job is different. Even in your own business, no two units operate under exactly the same conditions. Yet, in spite of this wide variation in the demands of owners, more Ford V-8 Trucks and Commercial Cars were bought in 1935 than any other make.

Why this trend to Fords? The man who knows his costs knows the answer. It is over-all economy. Low first cost makes interest and depreciation charges low. Other fixed costs such as wages, taxes and insurance are low because V-8 Performance enables the operator to do jobs that formerly required more or larger units. Maintenance costs are low because of V-8 Reliability and Ford's low-cost engine and parts exchange privileges. Fuel, oil and other variable costs are low because of the high quality of Ford design, Ford materials, Ford workmanship. Try a Ford V-8 Truck or Commercial Car under your own operating conditions. Call a Ford dealer today and set a date for an "on-the-job" test.

• • •

$25 PER MONTH, with usual down-payment, buys any 112-inch wheelbase Ford V-8 Commercial Car.

THE 1936
FORD V·8
TRUCKS

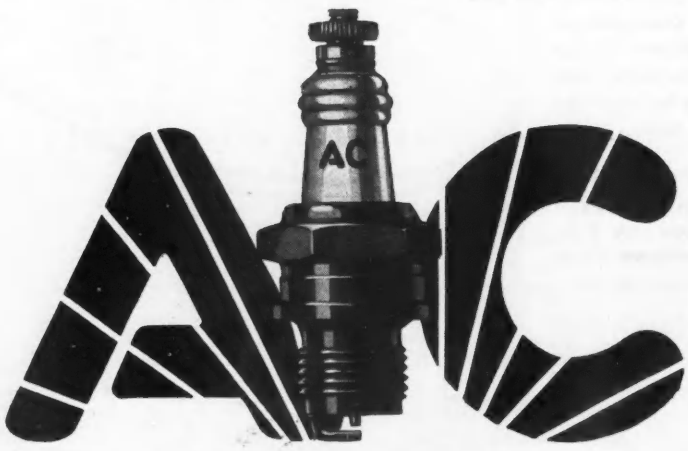
THE GOLD AWARD
won by
Atlantic Greyhound Lines
Charleston, W. Va.

CLASS "A" AWARD
for large city operations
won by
Motor Transit Company
Jacksonville, Fla.

CLASS "B" AWARD
for medium size intercity operations
won by
Washington Motor Coach System
Seattle, Wash.

CLASS "B" AWARD
for small city operations
won by
Oshkosh City Lines
Oshkosh, Wis.

ALL FOUR WINNERS USE



THE QUALITY SPARK PLUG

ALL four winners of the 1935 Awards "for completeness and efficiency in maintenance methods and practices" used AC Quality Spark Plugs.

This endorsement is certainly, impressive testimony to the fact that AC Long Life Spark Plugs, kept in condition with the AC Cleaning machine, do mean 100% spark plug satisfaction.

The conclusion is inescapable that AC Spark Plug equipment can contribute to better operation for *every* commercial vehicle operator.

AC SPARK PLUG COMPANY

FLINT, MICHIGAN **ST. CATHARINES, ONTARIO**

Same ROAD
Same LOAD

50% LESS GAS

THIS MAN* SAVES $150 A MONTH WITH ONE TRAILER

HERE is an amazing report:

"This customer operates both a straight truck and a tractor-trailer unit on a 50-mile run. The truck and the tractor-truck are the same make. The big truck, carrying 10 tons, uses 52 gallons of gasoline per round trip. The light tractor-truck, pulling a Fruehauf Semi-Trailer loaded with 10 to 12 tons, uses only 26 gallons per trip. This 50% reduction in gas represents a cash saving of $150 per month!"

THE REASON

With the Semi-Trailer, a smaller power unit is used—because any truck can easily pull three times more weight than it can carry! And when you use smaller trucks, your operating expenses automatically go down.

GAS SAVING ONLY ONE ITEM

Naturally you save on fuel. But that's only one item. You cut your investment cost 30% to 45%. You save on maintenance. Your depreciation expense falls. And you save tremendously by the mere fact that the Semi-Trailer, the load-carrying part of your unit, is quickly detachable from the truck.

"EXECUTIVE THINKING"

This booklet, now in its second edition, tells the whole Trailer story quickly and simply. Send for your copy today.

★Name on request

Oldest and Largest Manufacturers of Trailers

FRUEHAUF TRAILER CO.
10937 Harper Ave. . Detroit, Mich.
Sales and Service In All Principal Cities

NEW *Cab-Controlled* AUTOMATIC SEMI-TRAILER

FRUEHAUF manufactures both chassis and bodies—built together, engineered to each other. When you buy Fruehaufs, you get "Engineered Transportation" from roof to road.

● **TRAILER** operators everywhere have received the new Fruehauf Cab-Controlled Automatic Semi-Trailer with enthusiasm. This efficient unit is operated entirely from the driver's seat in the cab. No brake hose to disconnect. No support crank to operate. It's safer—more convenient—it parks closer—it's a time-and money-saver. And it costs only a few dollars more than a Manual Semi-Trailer. Write for your copy of a new descriptive folder now in preparation.

FRUEHAUF TRAILERS

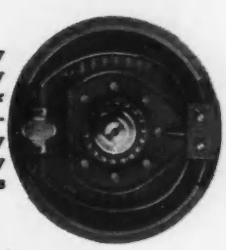
"Engineered Transportation"

REG. U.S. PAT. OFF.

IS THERE PENALTY OR PROFIT IN *Safety?*

What about safety in Trailer operation? To be safe and sure in the selection of a Trailer, must you pay a premium price? No! Professional Haulers have proven that the purchase price of a Fruehauf Trailer is an investment in SAFETY which pays substantial dividends!

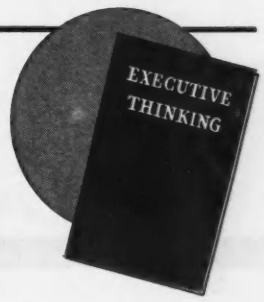
A NEW BRAKE



THIS new heavy-duty brake was designed by Fruehauf especially for Trailers. It provides utmost safety under any operating condition, any test or emergency. It cuts costs.

CUSHIONED ON RUBBER

THE FRUEHAUF 5th Wheel. Cushioned on live rubber. Only four moving parts. Bronze bushed. Wearing parts machined within 1/1000 of an inch. Simple—sturdy—safe.



● **A BOOKLET** which has helped hundreds of transportation men cut their company's haulage expense. Second edition just off press. Your copy mailed free immediately upon request.

85%
PLUS
In This Issue
MOTOR WORLD
WHOLESALE
MOTOR AGE
IN THIS ISSUE

COVERAGE of the BUYERS?

NO!

Of the Dollars!

In every field there are certain firms that do most of the business. In the automotive field, the firms that do 85% plus of the business are recipients of Chilton Publications. It is 85% plus *dollar* coverage we offer.

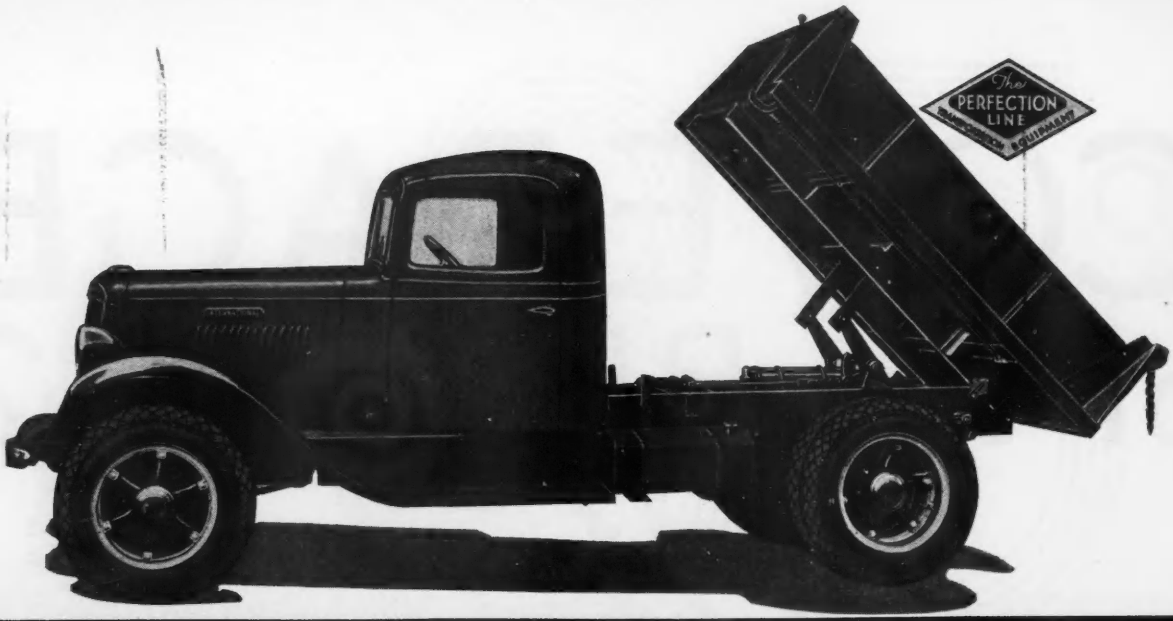
We proved that by the most searching investigation ever made in the automotive field. We took nobody's word for anything. We got the receipted bills for a whole year's business from a large number of wholesalers, car dealers, independent repair shops: a number large enough to certify the typicality of the results. We analyzed every item on every bill—a five months' job for a large staff of trained men and women aided by the most modern tabulating machinery.

When we ended we knew: What each type of automotive merchant bought; what he paid; whom he bought from; what discounts were allowed. There was no guesswork, no estimation, no wishful thinking, no "blue sky" in that investigation. We ***knew.***

Upon the rock of those facts we realigned our publications in the automotive wholesale and retail field. We now offer advertisers a concentration upon sales such as has never before been available to them even in Chilton publications. With this precision our new rates effect economies in advertising expenditure equally unprecedented.

CHILTON COMPANY

CHESTNUT AND 56TH STREETS, PHILADELPHIA, PA.



Continued LOW COST Efficiency

DUMPING UNITS for EVERY TYPE OF JOB with *Exceptional Dumping Speed*

Perfection Model 6 Hydraulic Hoist—with its full 6 inch diameter cylinder, with piston stroke to give a full 50° dumping angle to a 96 inch body, is an oversize hoist for all short wheelbase 1½ and 2 ton trucks, normally intended for 1½ and 2 yard bodies but amply handles pay loads up to 12,000 pounds. Exceptional dumping speed with quiet, convenient operation controlled from the cab. A light, rigid, rugged, economical hauling unit is formed by combining this efficient hoist with any one of the

PERFECTION TYPE "100" SERIES STEEL DUMP BODIES

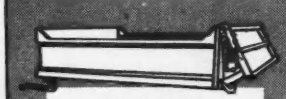
furnished in eight styles and many capacities.

Write for special bulletin, data and prices.

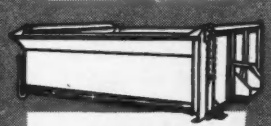
THE PERFECTION STEEL BODY CO.
GALION, OHIO

MODEL 52 BODY
Straight side — square corners — top reinforcing flange — 1½ and 2 cu. yd. Also 75 cu. ft.

MODEL 54 BODY
Heavy Duty — straight, 2 brace sides, double acting tail gate with controls under full length running board. 1½ and 2 cu. yds.

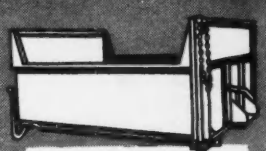


MODEL 60 BODY
Straight sides — mud guard rub rail type running boards. Double acting tail gate. 1½ and 2 cu. yds.

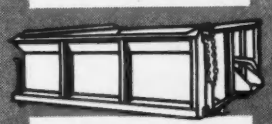


MODEL 53 COAL BODY
Flared sides — partitions and tail gate door with chute, for batch loads — 75 cu. ft.

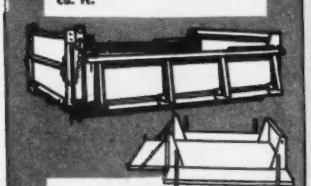
MODEL 56 GARBAGE BODY
Water tight — designed for quick dumping — 72" wide 2, 2½ and 3 cu. yd



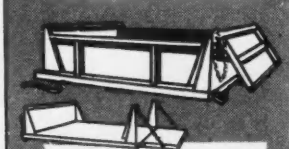
MODEL 52 COAL BODY
Straight sides — square corners, top reinforcing flange. Extended headboard and tail gate. 2 tons of coal or 2 tons of coke.



MODEL 55 COAL BODY
Heavy duty — flared double braced sides, full running boards — partitions and door chute 75 cu. ft.



MODEL 57 CONVERTIBLE
Dump or platform type for all purpose use. 60" width increased to 88" One piece floor. 1½ cu. yd



MODEL 58 BODY
Removable sides Permanent or hinged sides available — stiff and strong. 1½ and 2 cu. yds.

· HOISTS · DUMPING UNITS

PERFECTION

· BODIES · THIRD AXLE UNITS

The new Beck Cosmopolitan Coach. A transportation unit soundly engineered, beautifully designed, attractively colored. Finished for beauty and duty with Sherwin-Williams Transit Finishes.

SHERWIN-WILLIAMS TRANSIT FINISHES

KEM TRANSPORT ENAMEL · OPEX LACQUERS · OLD DUTCH RAILWAY ENAMEL

PRESENTING A New and Revolutionary Product

BY AN OLD ESTABLISHED FIRM

TWO YEARS AGO we gave our Research Staff a problem. Six months ago they gave us the "Answer". For six months we have put this "Answer" to the acid tests demanded by our prestige and reputation. And now, gentlemen of the fleet-operating world, here it is: A NEW AND REVOLUTIONARY DECALCOMANIA TRANSFER—for the lettering and trade-marking of trucks, wagons, buses and cars. A *genuine* decalcomania transfer. Not an experimental novelty. Not a hand-processed substitute. This transfer is a product of the time-tested litho-machine method which our years of experience have shown us is far superior. And here are the benefits our new transfer brings to you:

EASIER, QUICKER APPLICATION—you can apply these transfers in one-half the time formerly needed.

BRIGHTER COLORS—entirely new ingredients having greater brilliance, richness, clarity and smoothness.

GREATER PERMANENCE—tests prove the new colors retain original strength and luster more than twice as long. These colors, furthermore, are "Self-Adjusting" to climatic changes—they "soften" in hot weather, "tighten" in cold; thus, the transfer does not crack, chip, or peel. The new transfer also shelves better; it stands up longer in storage.

UNRESTRICTED APPLICATION—can be applied with equal success to *synthetic,* paint, lacquer, or enamel surfaces.

LESS "EXTRA PROTECTION"—pencil varnishing over these new transfers is optional; it really is not necessary. We give them the "extra protection" in process of manufacture.

LOWER COSTS—the quicker application saves time; but the real important saving lies in the longer life, the much greater durability.

Keeping pace with progress and change in the field of finishes—and of course transfers are definitely tied-up with finishing problems—these new transfers fit hand-in-glove with SYNTHETIC and other new finishing materials now widely in use. Never before has it been possible to use this consistent material in decalcomania litho-machinery. This transfer is, we are convinced, the "Natural" decalcomania for the new finishes, and works equally well with the old.

We urge you to see for yourself—to send for a sample—to test it—to prove the claims we make for it! AND—*you are invited to give this new transfer a* WINNING NAME . . . and earn for your firm 100 sets of these new transfers *absolutely free.* Read the following page for details.

★ THE MEYERCORD CO.

OLDEST AND LARGEST MANUFACTURER OF DECALCOMANIA TRANSFERS IN AMERICA

. . . AND INVITING YOU

NOT ONLY TO SEE IT. BUT TO GIVE IT A WINNING NAME

. . . AND EARN FOR YOUR COMPANY

100 SETS

OF THESE NEW

DECALCOMANIA TRANSFERS

FOR TRUCKS • WAGONS • BUSES • CARS

ABSOLUTELY FREE

WOULD you like to win for your firm 100 sets of these new transfers absolutely free? Such a prize might easily have an actual cash value, to your company, of $5,000.00! Wouldn't that be a worthwhile gift to your firm, and a big bright feather in *your* cap!

To make it possible for you to win that prize, we are staging a CONTEST—to give our new transfer a name. A good, easily-remembered name is an asset to any product, you know. We want one that will express in one word, or in a short combination of words, the *outstanding advantages* of our new transfers. These advantages are clearly set forth on the foregoing page. A careful reading of them will give you a number of "cues".

To help you get started, here are two names we are now using for two other types of decalcomania we make:

"DU-CAL"—this is our *dual-purpose* decalcomania, for application either to inside of windows or outside of opaque surfaces.

"KWIK-WAY"—this transfer is applied merely with water—the *quick way.* It's used as a colorful nameplate on thousands of products.

To give you further assistance, here are two names that have already been suggested: "Permia-Gloss" Transfers; "Synthatone" Transfers.

WHO IS ELIGIBLE. *Any person connected with a firm having ten or more vehicles is eligible to enter this contest.* Members of the Meyercord organization, their relatives, and relatives of the Judges are barred.

THE JUDGES. The winning name will be selected by two Judges, Mr. George T. Hook, Editor, Commercial Car Journal and Mr. C. W. Stocks, Editor, Bus Transportation. Their decision will be final.

ADDITIONAL PRIZES. In addition to the first prize, the Judges will select FIFTY NAMES which in their opinion deserve "Honorable Mention". To each of the fifty persons suggesting these names we will present a beautiful reproduction of our expensive oil-painting, mounted on canvas and stretcher and richly framed, suitable for office or home. The original painting will be a work of Mr. James Topping, internationally known landscape artist, a member of the Meyercord Art Staff. Mr. Topping was recently honored by the purchase of several of his landscapes by Mrs. F. D. Roosevelt, for the White House at Washington.

FURTHERMORE—to each person submitting a name, we will send by return mail, three sets of "Kwik-Way" Transfer initials—for application to the door of your automobile or other personal property you wish to identify.

CLOSING DATE. This contest will close on March 15th, 1936. No entries post-marked after that date will be considered. The name selected and winner of the first prize will be announced in the April issue of this magazine. In case of ties, duplicate prizes will be awarded.

Send as many names as you wish, now or later—
BUT CLIP THE COUPON AND SEND IT NOW—AND RECEIVE BY RETURN MAIL YOUR FREE KWIK-WAY TRANSFER INITIALS—AND A SAMPLE OF OUR NEW DECALCOMANIA TRANSFER.

Clip and send the coupon now!

THE MEYERCORD CO.
208 W. Washington St., Chicago, Illinois

COUPON

THE MEYERCORD CO.
208 W. Washington St., Chicago

Suggested Name.....

My firm is.....

Address.....

We operate following number of vehicles.....

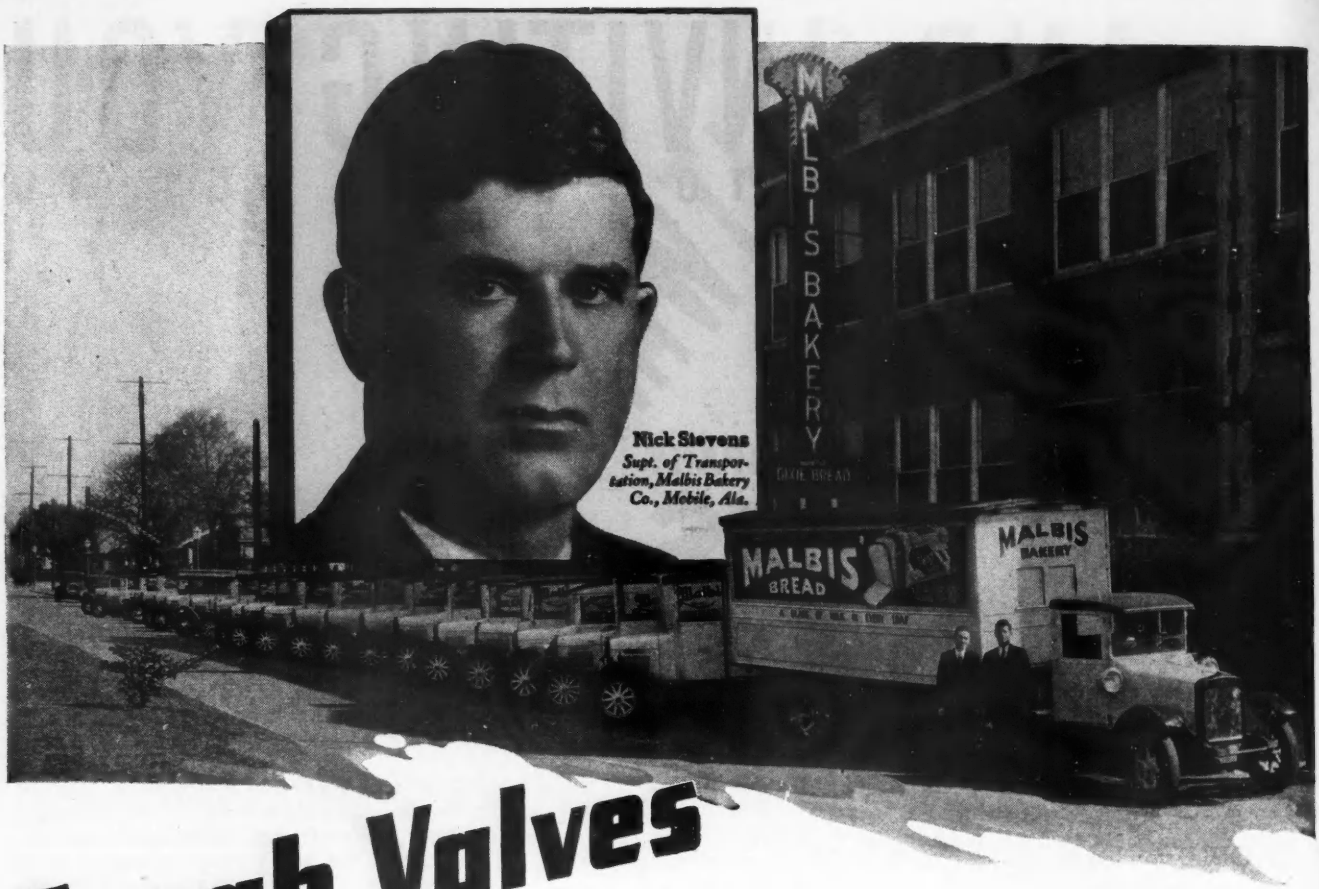
My position is.....

Please send me three sets of my initials in care of the above firm. Also send me a sample of your new decalcomania transfer.

.....(1)
(Print or write plainly so that proper initials will be sent)

DECALCOMANIA

BRANCH OFFICES IN ALL PRINCIPAL CITIES



Nick Stevens
Supt. of Transportation, Malbis Bakery Co., Mobile, Ala.

Tough Valves *for Tough Going in Dixie*

The worst stretches of unimproved roads in the state of Alabama make up a large part of the territory traveled by the 45 delivery cars of The Malbis Baking Company, Mobile. It is a real proving ground for trucks and parts.

Since Thompson Products have been adopted as standardized replacement parts, many Malbis units have operated in excess of 40,000 miles without opening the motor for valve grinding or replacement of pistons, rings or pins.

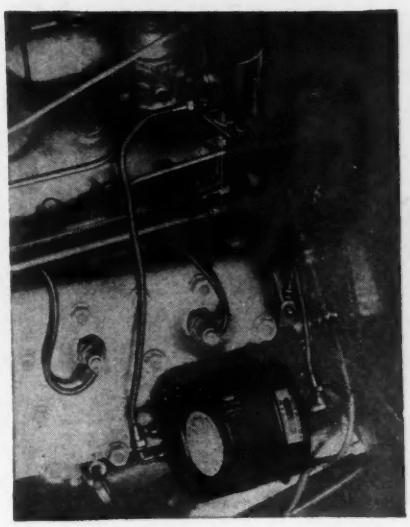
Thompson parts are built to "take it"—and they do!

THOMPSON PRODUCTS, INC.
CLEVELAND • DETROIT

The attention of maintenance engineers is invited to Kit 58

PUROLATOR OIL FILTERS

especially designed for Ford Trucks



THE smooth, even operation of a V-8 engine is produced by counterbalancing two banks of four cylinders each and is maintained as long as the friction clearances remain within recognized limits.

There is no quicker way of wearing machined surfaces than by allowing carbon, grit, and road dust to remain in the lubricating oil; and no surer, more positive method of removing this material than by installing a Purolator.

The extra wear and abuse given to fleets of Ford trucks by indifferent drivers creates an additional need for this protection, offered by Purolator, to the swiftly moving, polished surfaces of the Ford motor. Purolator's operation is as follows:

The oil pump in the V-8 Ford supplies oil through a large central oil gallery in the center, upper part of the V-8 motor.

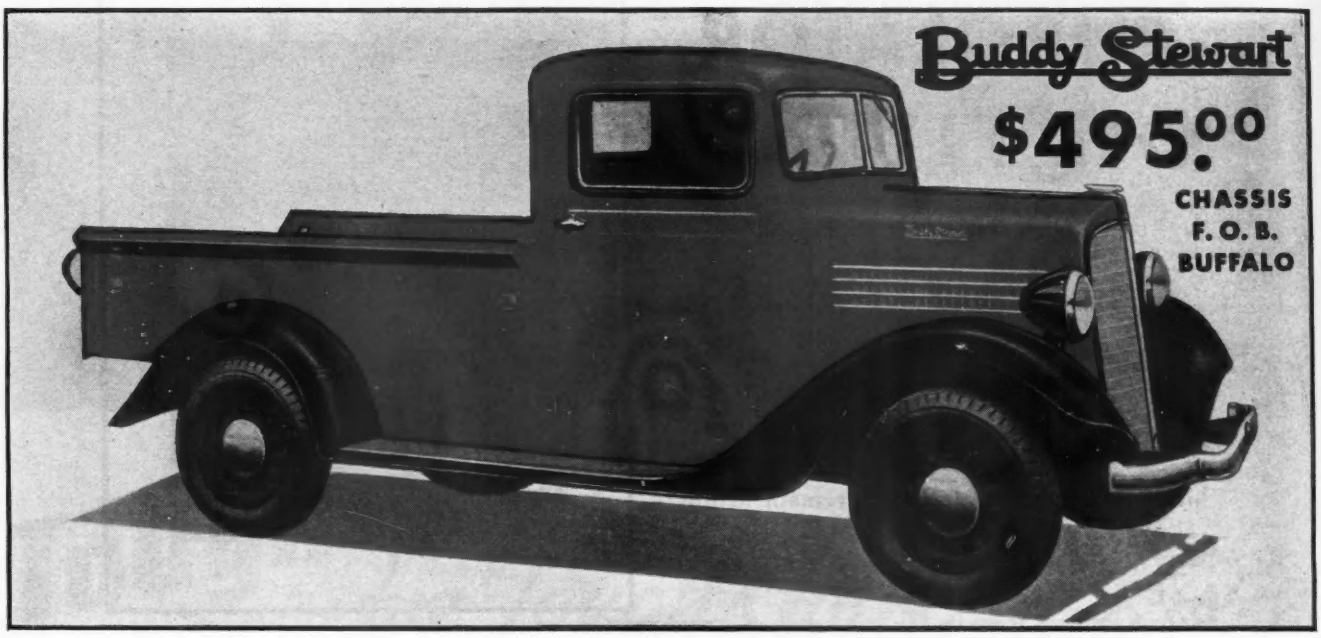
When the Purolator is installed the oil which is taken through the Purolator comes directly from the above mentioned oil gallery. After the oil is passed through the Purolator it is returned to the crankcase, directly in '35 and '36 models and through the valve chamber in the 1934 model. With the installation of the Purolator there is absolutely no increase in the amount of oil which is passed to the upper part of the engine.

The Purolator Kit 58 consists of an oil filter, tubing and fittings for installing Purolators on 1934 to 1936 Fords. Passenger-car owners realize the filter's aid to smoother operation and have installed them by the thousands with corresponding savings in repair shop expense.

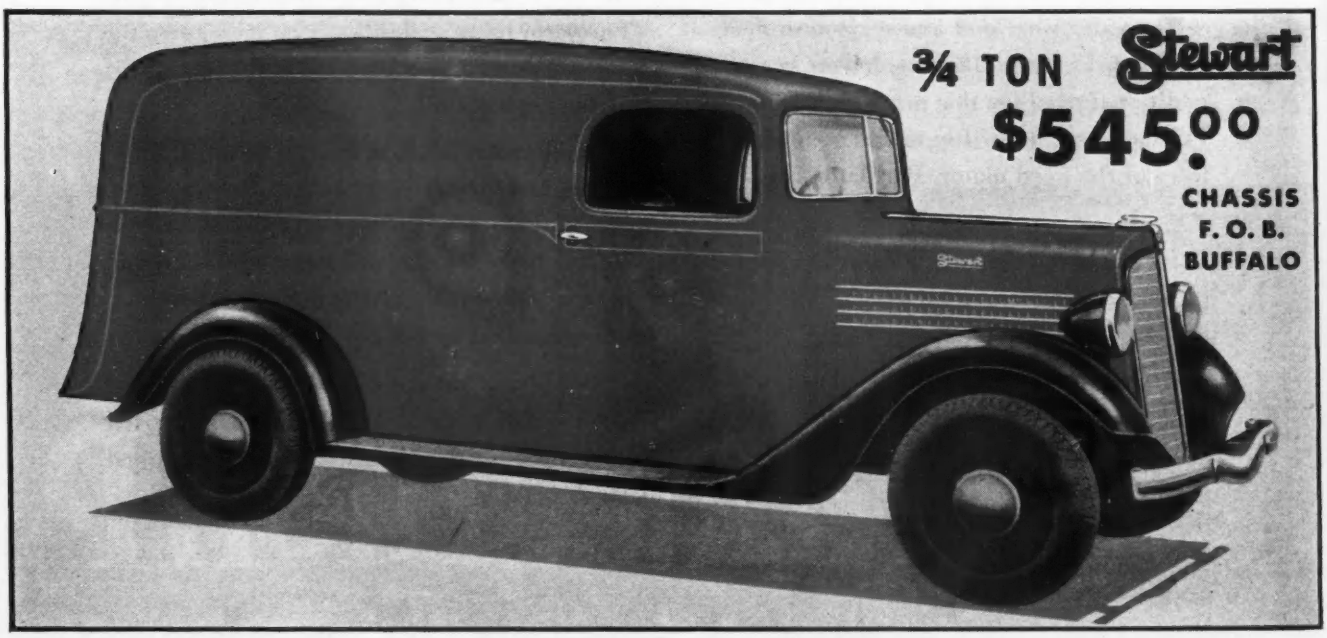
This protection costs only $3.50 plus a small installation charge. Equip your fleets with Purolators now and effect the saving outlined above.

MOTOR IMPROVEMENTS, INC.
365 FRELINGHUYSEN AVENUE
NEWARK, NEW JERSEY

DELIVERY COSTS



The Buddy Stewart is a radical departure in ½ ton truck design, built for "multi-stop" service. Strictly a truck unit, it has a small, flexible 4-cylinder engine, extra large hydraulic brakes and clutch, rugged synchro-mesh transmission, full floating truck axle. A true investment in low cost deliveries.



The ¾ Ton Stewart is a popular example of the economy of "100% truck design." Whether it is city-wide stop-and-go service or long-quick hauls, this Stewart performs with top economy. Smooth six-cylinder engine, quiet synchro-mesh transmission, plus reliable Stewart engineering throughout.

STEWART TRUCKS HAVE WON

HIT A *New Low!*

WITH THESE RUGGED NEW *Low Priced Stewarts*

Stewart engineering scores another record for economy in these NEW models . . . They are quality trucks at low prices. Built in the same tradition of dependability and efficiency that has earned a world-wide reputation for Stewarts for nearly a quarter of a century. The Stewarts for 1936 are engineered to speed up delivery time and reduce operating costs all along the line—gasoline, lubrication, tires and repairs.

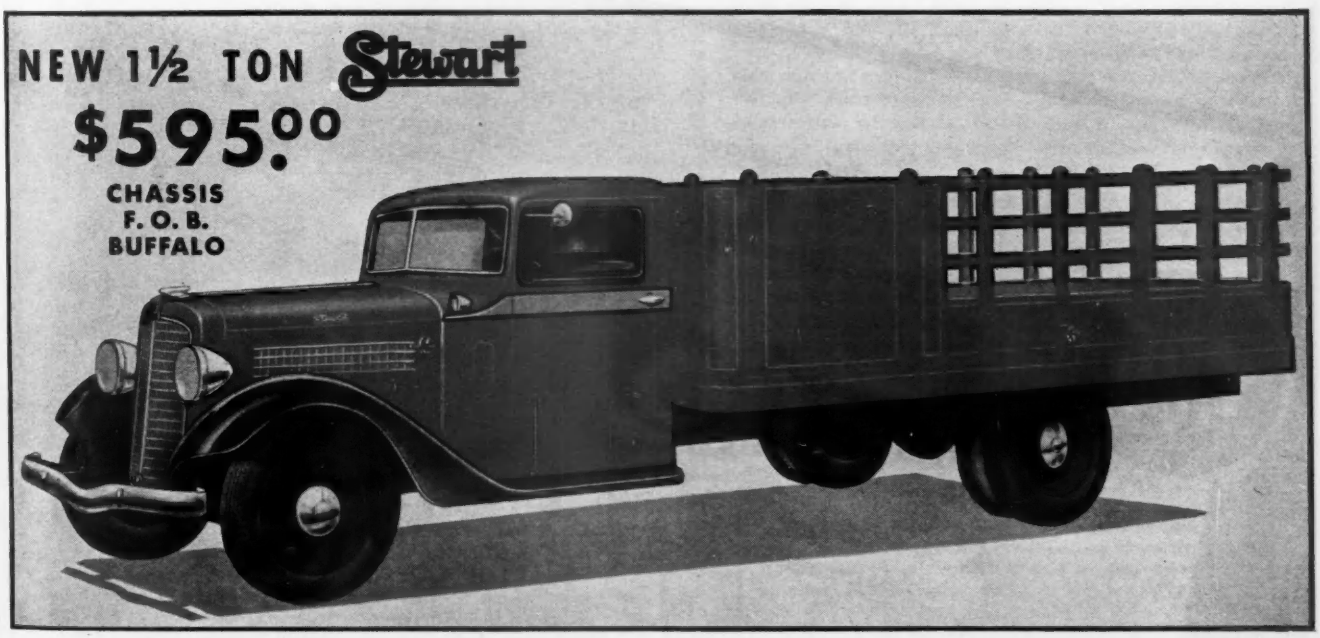
See these NEW models and check the improved Stewart features before you make any decision.

Compare Stewarts side by side with any competing truck! Test them for performance. Then—ask any Stewart owner what Stewart economy means to him. Here's a line of trucks not built on a 2 or 3 year basis, but for many, many years of continuous service with minimum repairs.

There's a Stewart "geared" in size and price to your particular business requirements. Other models up to 10 ton capacity. Catalog sent on request.

STEWART MOTOR CORPORATION
BUFFALO, N. Y.

Stewart
MOTOR TRUCKS



The new 1½ Ton Stewart combines heavy truck dependability with economy of operation. A truck that's built to last for many years. Economical six-cylinder motor, sturdy clutch, four speed transmission, full floating rear axle, four-wheel hydraulic brakes, plus many other improved features.

BY COSTING LESS TO RUN

announcing
Greater 1936 values
in General Motors Trucks

1. Cost-reducing improvements throughout the entire line.
2. Advanced streamline appearance.
3. For the first time, money-saving GMC dual performance axles in 1½ ton to 6 ton capacity ranges.
4. More distinctive, more comfortable streamlined cabs.
5. Correctly sized engines for maximum economy and improved performance—in every capacity range.
6. A new quality low-priced ½ ton delivery.
7. A greater value in the 1½-2 ton range. At this extremely low price you can now get the quality GMC many-feature truck that is built to out-perform and out-earn.

½ TON $425 CHASSIS F.O.B. PONTIAC — TRUCKS OF VALUE

$525 CHASSIS F.O.B. PONTIAC

Time payments available through our own 6% Y. M. A. C. plan

General Motors Trucks and Trailers

GENERAL MOTORS TRUCK COMPANY • PONTIAC, MICHIGAN

½ TO 15 TONS

What? A Generator that Shoulders the Battery's Burden?

Yes, sir...and here's what it means to trucks and buses!

IT means that when the engine is running, the Volt-O-matic Generator—*and not the battery*—ALWAYS furnishes all electrical current to lamps, heater, wiper and all current consumers. *Never too little; never too much!*

It means that the life of the battery is infinitely prolonged. First because the battery is used only as a reservoir, to operate the starter and furnish current when the engine is not running. Second because the battery is protected from the costly dangers of overcharging; the expenses resulting from insufficient charging. For remember: the Volt-O-matic Generator feeds the current to the battery, too, precisely in accordance with its needs. *Never too much; never too little!*

It means that, with the battery always in healthy condition and the current consumers fed directly by the Volt-O-matic Generator at full voltage, you are the happy beneficiary of steady, bright lights, safer horns, more efficient ignition, on-the-minute schedules, minimized maintenance.

You take no chances with Volt-O-matic Generators. Hundreds of thousands are in use! Rolling up serviceless mileage records in excess of 100,000 miles! Steadily improved for over 10 years, their trouble-free performance is insured by inherently correct design . . . fine materials . . . conscientious construction and the experience gained by their makers in more than a decade of building voltage regulated generators.

Test Volt-O-matic Generators in actual service—the sure way to prove the hard-to-believe claims we make. Take the first step now—send for new illustrated booklet!

TWO OTHER AUTOMOTIVE ARISTOCRATS

Our Ditch and Fog Light has a triple beam that spreads a semi-circle of safety around the car and under the fog. It's a life-saver to the "highway haunters," the drivers of buses, trucks, taxicabs, police squad cars, etc.

The Neverstall Windshield Wiper is driven by its own electric motor; hence its steady powerful sweep is independent of car speeds. Never falters going up hill or "giving 'er the gas." Ask for full information about these products which appeal to those who want the best performance, greatest endurance and maximum efficiency.

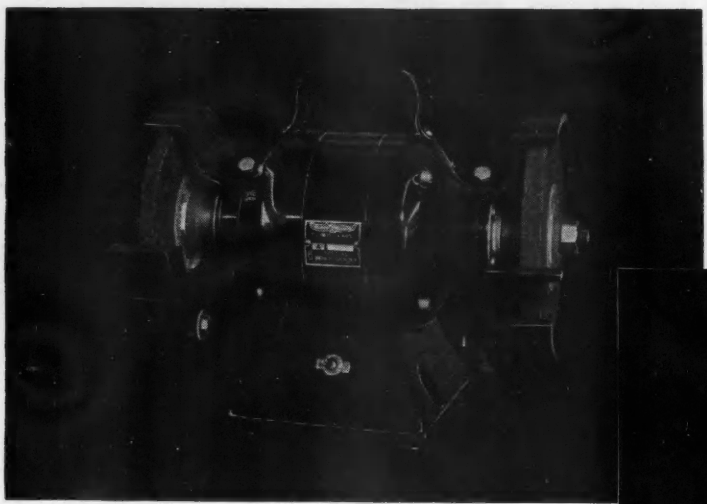
We have always taken pride in creating, designing, building and selling products superior to those commonly in use. Built to a high standard of quality, these products are proven leaders in their fields.

UNITED AMERICAN BOSCH CORPORATION

SPRINGFIELD, MASS. NEW YORK · CHICAGO · DETROIT

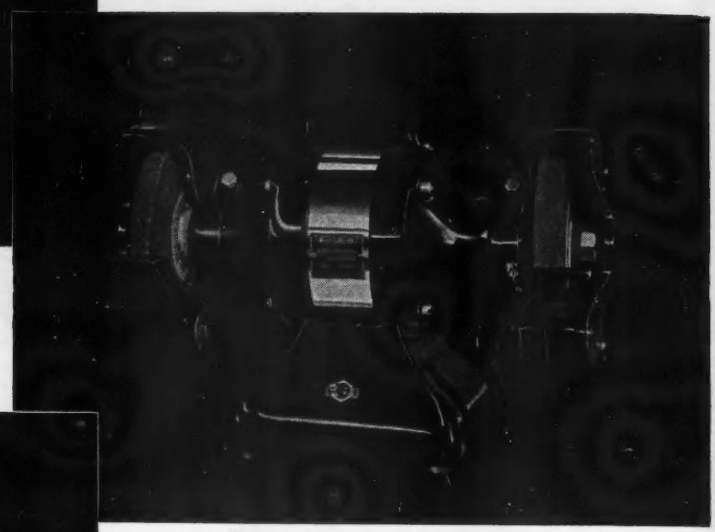
New Black & Decker Bench Grinders

Powered to Meet Today's Needs • Priced to Suit Today's Budgets

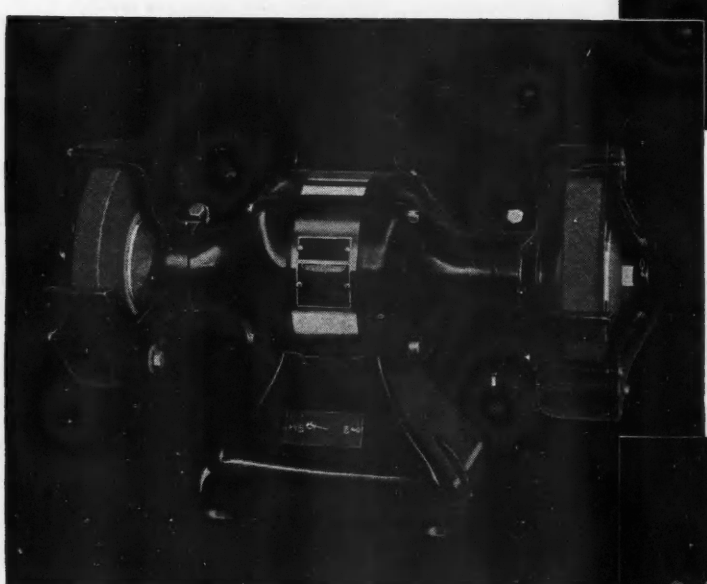


LOOK at these new Black & Decker Bench Grinders—then look over your shop. You'll find many places where these Grinders will save time, money and temper—will reduce costs and increase profits on grinding, cleaning, buffing, and tool sharpening. See these tools at your jobbers—or write for complete catalog. Black & Decker Mfg. Co., 732 Pennsylvania Avenue, Towson, Maryland.

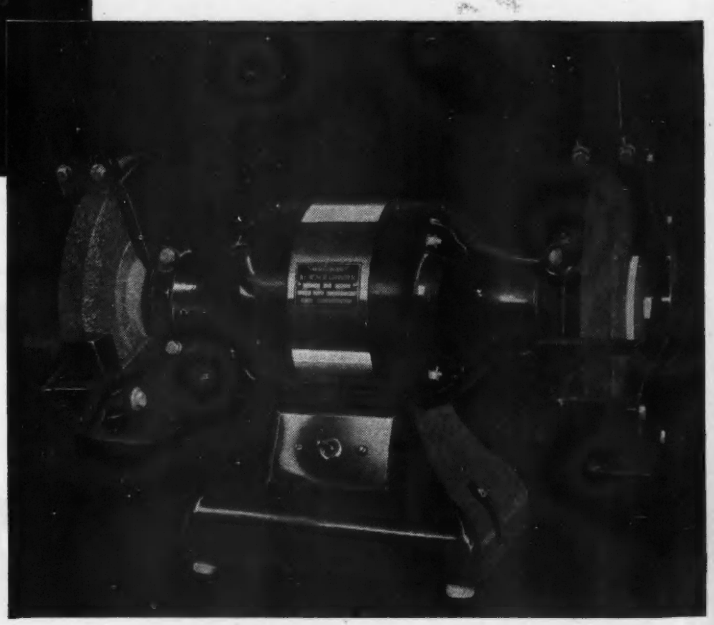
NEW 6" BENCH GRINDER: (above) Priced so low that even the smallest shop can afford a power grinder—and larger shops can spot several of them about where they'll come in handy. A quality grinder at a sensationally low price. **$24.00.**



NEW 6" HEAVY DUTY GRINDER: (above) Combines the advantages of a wide type construction with the sturdiness and power for heavy duty work. Ball bearing wheel spindle. Rotating parts balanced to eliminate vibration. **$42.00.**



NEW 7" BALL BEARING GRINDER: (left) Designed and powered for general shop work—grinding, wire-brushing, tool sharpening, etc. Extended spindle and housing simplify work on odd-shaped pieces. Grease-sealed ball bearings. **$56.00.**



NEW 10" BALL BEARING BENCH GRINDER: (right) A wide type bench and pedestal grinder, powered for heavy jobs. Ball bearings close to wheels assure smooth operation. Fully enclosed guards and tool rests are adjustable. **$88.00.**

BLACK & DECKER

VIBRO-CENTRIC VALVE SEAT GRINDERS • DRILLS
DRILL STANDS • VALVE REFACERS • POLISHERS
BENCH GRINDERS • PORTABLE GRINDERS
FLEX DISC SANDERS • HEAT GUNS

Balanced

ERNA ANDERSON—world-famous skater, now an instructor at Wembley, England—executing a perfect back toe stop—a skating figure which requires *perfect balance.*

BALANCE! That's the word that describes Packard FOUR-FORTY—and distinguishes it from all other ignition cable! For Packard FOUR-FORTY offers a new high degree of resistance, not only to heat, but to high voltage rupture, oil and age as well! Packard FOUR-FORTY provides a perfect equalization of *all* the qualities that are required in the strenuous duties of bus, truck, or fleet service. That is why it will pay *you* to install Packard FOUR-FORTY on *your* equipment *now.* You will find that it will eliminate one out of every three ignition cable replacements. Order from your jobber. . . . Packard Electric Corporation, Warren, Ohio.

Packard

REG. U. S. PAT. OFF. TRADE MARK

THE STANDARD WIRING EQUIPMENT OF THE AUTOMOTIVE INDUSTRY

"Creating a more favorable acceptance of our complete line,"

Says
Mr. H. R. Kerans,
President of
The K-D Lamp Co.

of his advertising in

COMMERCIAL CAR JOURNAL

THE K-D LAMP COMPANY
AUTOMOBILE LAMPS
CINCINNATI, OHIO

Commercial Car Journal,
Chestnut and 56th Streets,
Philadelphia, Pa.

Gentlemen:

Undoubtedly you will be interested to know that our advertising in your publication has been most satisfactory, both from the standpoint of creating a more favorable acceptance of our complete line of reflectors, torches, headlamps, tail lamps, truck mirrors, and so forth through the jobber, and on an actual inquiry basis as well.

The initial page advertisement which ran in the March, 1934, issue produced between seventy five and eighty inquiries from the larger and more important fleets of the country. The quarter page advertisements which we have been running each month since are bringing inquiries from this same source as well as from jobbers at the rate of from fifty to sixty per month.

We are very glad to endorse "Commercial Car Journal" as an advertising medium to any manufacturer who has a story to tell to the large fleet market and who wishes to impress the jobber with a program to help build sales in this heavy duty field.

Yours very truly,

THE K D LAMP COMPANY

H. R. Kerans
President

HRK:F

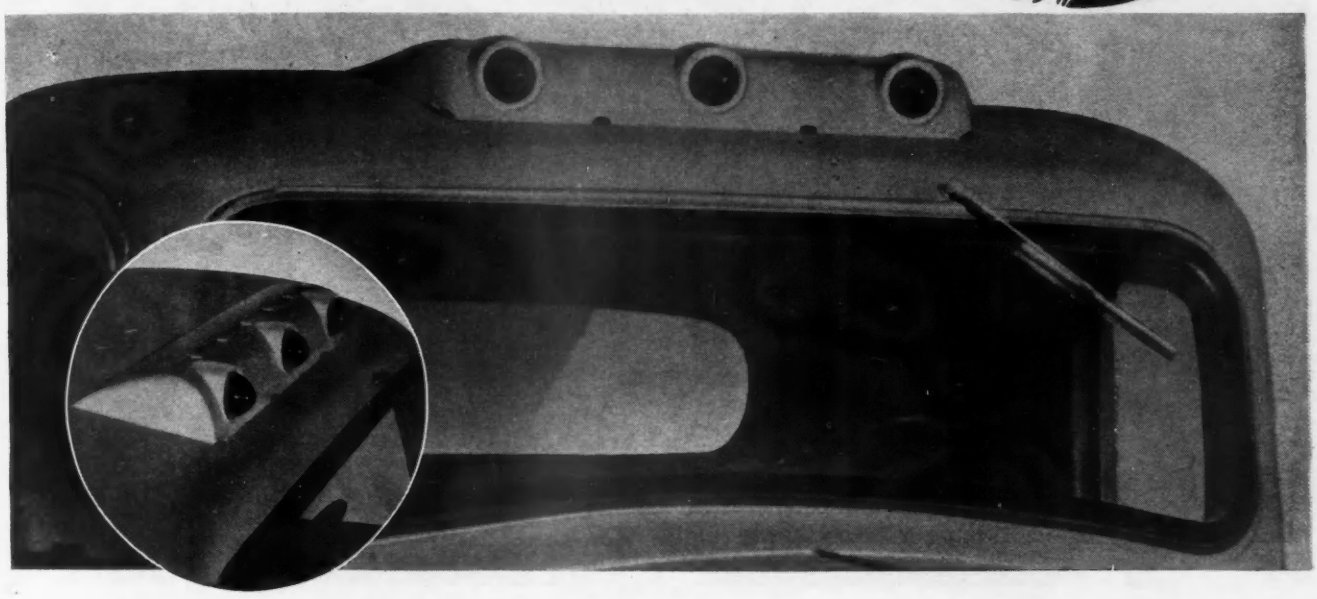
The experience of K-D Lamp Company is typical. Many other letters express similar satisfaction with advertising results obtained through this leading Truck Fleet publication.

With an increase of 94% in advertising volume during 1935—and 12,548 *traceable inquiries* to this advertising, the lights are Green both for COMMERCIAL CAR JOURNAL and its many advertisers.

COMMERCIAL CAR JOURNAL
A Chilton Publication
Chestnut and 56th Sts., Philadelphia, Pa.

THE K-D LAMP COMPANY PLANT

A few dollars for an N-L VENTILATOR *can save you* HUNDREDS OF DOLLARS



• Faced with twenty thousand highway accidents a year, as the result of fatigued or dozing drivers, operators are making a determined effort to *cut down* this terrific toll of life and property.

They are ventilating their truck cabs. They are giving their drivers *not* carbon monoxide laden air to breathe but clean, fresh air. They have at the wheel *not* dozing drivers but keen, alert men.

N-L Flexible Ventilator. This weather-tight ventilator goes on the roof of the cab and draws out the foul air. It creates, while the truck is in motion, a constant circulation of air in the cab, without drafts. Made of pliable rubber it fits the roof curvature. Is quickly applied by any body shop. It comes plain or equipped with three safety lights.

N-L Ventilating System Standard on White Trucks. This is a highly efficient built-in ventilating system. The intake draws in fresh air above the windshield and deflects it downward into the cab. It is absolutely weatherproof. The exhaust—on the roof—ejects the used air and assures ventilation without drafts.

Good ventilation for trucks costs so little that no operator can afford to be without it and risk the loss.

RESOLVE NOW TO END LOSS
. . . SEND FOR LITERATURE

THE NICHOLS-LINTERN COMPANY
7960 Lorain Avenue • Cleveland, Ohio

Please send me complete information on N-L Flexible Ventilators ☐, on N-L Ventilating Systems ☐ for _____ trucks.
MAKE

Name of individual _____ Position _____

Firm _____

Address _____

The **NICHOLS-LINTERN** *Co.*

7960 LORAIN AVENUE **CLEVELAND, OHIO**

..ON THE SPOT

● When a truck skids into another car the driver is put on the spot immediately and so is the truck owner. The driver's momentary helplessness, because of lost traction, is no excuse in the eyes of John Law nor those of the owner whose car was bumped or crushed. . . .To stay out of damage suits equip your trucks with proper tire chains and see that they are used in snow, sleet or mud.

WEED AMERICAN Bar-Reinforced Tire Chains *double the mileage—double the safety*. Their Bar-Reinforced Cross Chains grip the road and provide double metal where wear comes. WEED AMERICAN Side Chains are electric-welded and super-hardened. End Hooks have the name "WEED" stamped on them for your protection. They are strong and lock positively. WEED AMERICANS are made of Weedalloy, the most perfect metal known for tire chain construction.

Made by American Chain Company, Inc., Bridgeport, Connecticut.

DON'T GAMBLE *with* DEATH

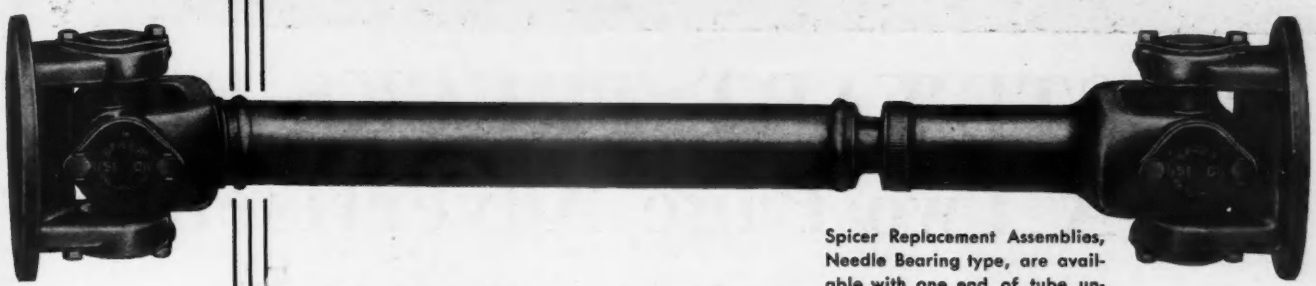
Demand

WEED AMERICAN
Bar-Reinforced TIRE CHAINS

Licensed to manufacture and sell Bar-Reinforced Tire Chains under United States and Canadian Letters Patent: American Chain Company, Inc.; The McKay Company; The Chain Products Company; Pyrene Manufacturing Company; Dominion Chain Company, Ltd.; and Pyrene Manufacturing Company of Canada, Ltd.

Modernize your fleet

Spicer Needle Bearing Change Over Assemblies for Trucks, Buses and Passenger Cars

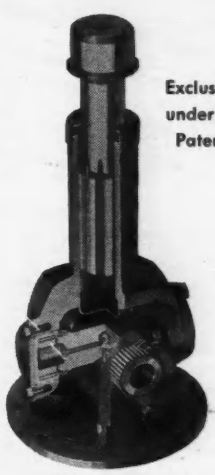


Spicer Replacement Assemblies, Needle Bearing type, are available with one end of tube unwelded; tube may easily be cut and welded to exact overall length required.

● Like all other Spicer products, these Needle Bearing Joints are made from the finest materials, and are held to the most exacting standards of heat treatment and workmanship.

Bring your fleet up-to-date with Spicer Needle Bearing Joints. They cost no more than unknown and unproven units—and cost far less in the long run. Remember, Spicer Equipment is standard equipment, used on nearly all trucks, buses and passenger cars.

Consult your nearest Spicer Authorized Distributor, or write us direct for Bulletin No. 83.

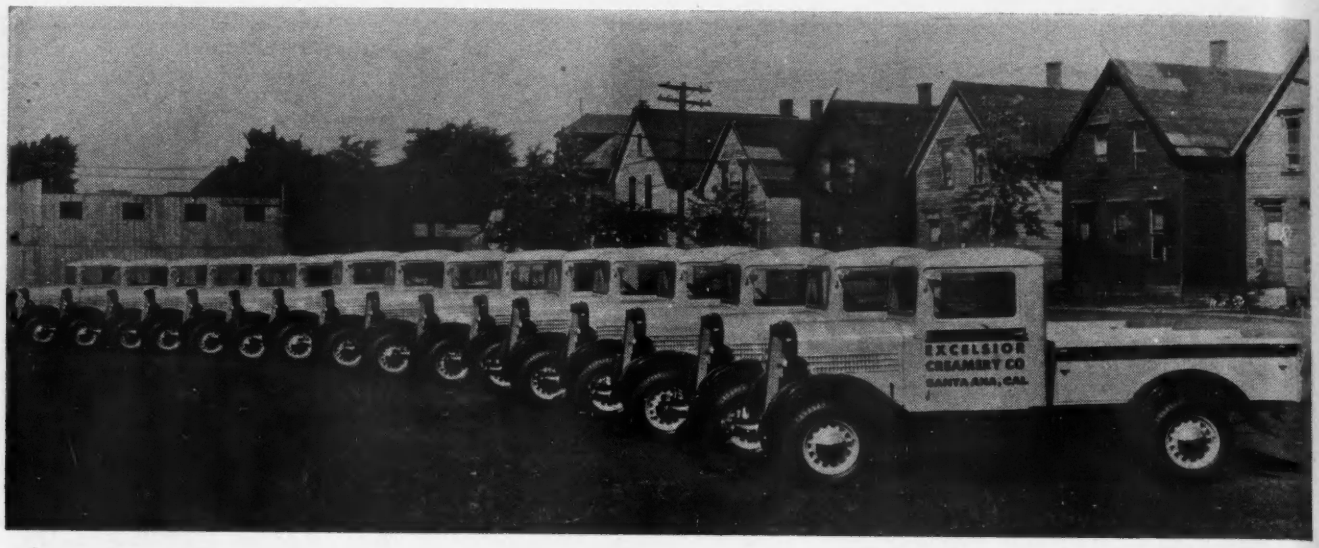


Exclusive licensees under Goetz U. S. Patent RE 18080

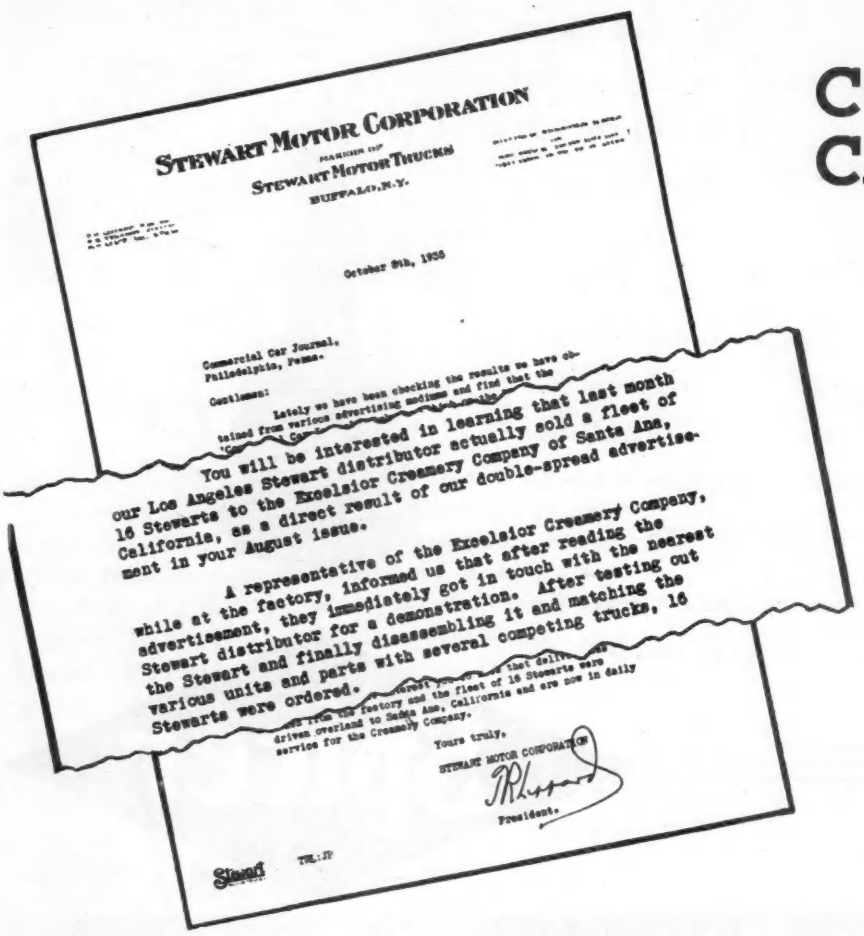
Spicer

Spicer MANUFACTURING CORPORATION • TOLEDO • OHIO

BROWN-LIPE	SALISBURY	SPICER	PARISH
CLUTCHES and TRANSMISSIONS	FRONT and REAR AXLES	UNIVERSAL JOINTS	FRAMES READING, PA.



16 STEWART TRUCKS SOLD By A Two Page Advertisement In COMMERCIAL CAR JOURNAL



STEWART MOTOR CORPORATION

MAKERS OF STEWART MOTOR TRUCKS

BUFFALO, N.Y.

October 9th, 1935

Commercial Car Journal,
Philadelphia, Penna.

Gentlemen:

Lately we have been checking the results we have obtained from various advertising mediums and find that the Commercial Car Journal

You will be interested in learning that last month our Los Angeles Stewart distributor actually sold a fleet of 16 Stewarts to the Excelsior Creamery Company of Santa Ana, California, as a direct result of our double-spread advertisement in your August issue.

A representative of the Excelsior Creamery Company, while at the factory, informed us that after reading the advertisement, they immediately got in touch with the nearest Stewart distributor for a demonstration. After testing out the Stewart and finally disassembling it and matching the various units and parts with several competing trucks, 16 Stewarts were ordered.

[illegible] that deliveries were made from the factory and the fleet of 16 Stewarts were driven overland to Santa Ana, California and are now in daily service for the Creamery Company.

Yours truly,

STEWART MOTOR CORPORATION

President.

Steward TH.:JF

It has often been said that readers of COMMERCIAL CAR JOURNAL are exceptionally responsive.

The caption above, and the letter at the left, give you concrete proof of this statement — 16 trucks bought from an advertisement in "C. C. J."

This is another one of the reasons why the advertising in COMMERCIAL CAR JOURNAL increased 94% in 1935. Its readers BUY what its advertisers advertise.

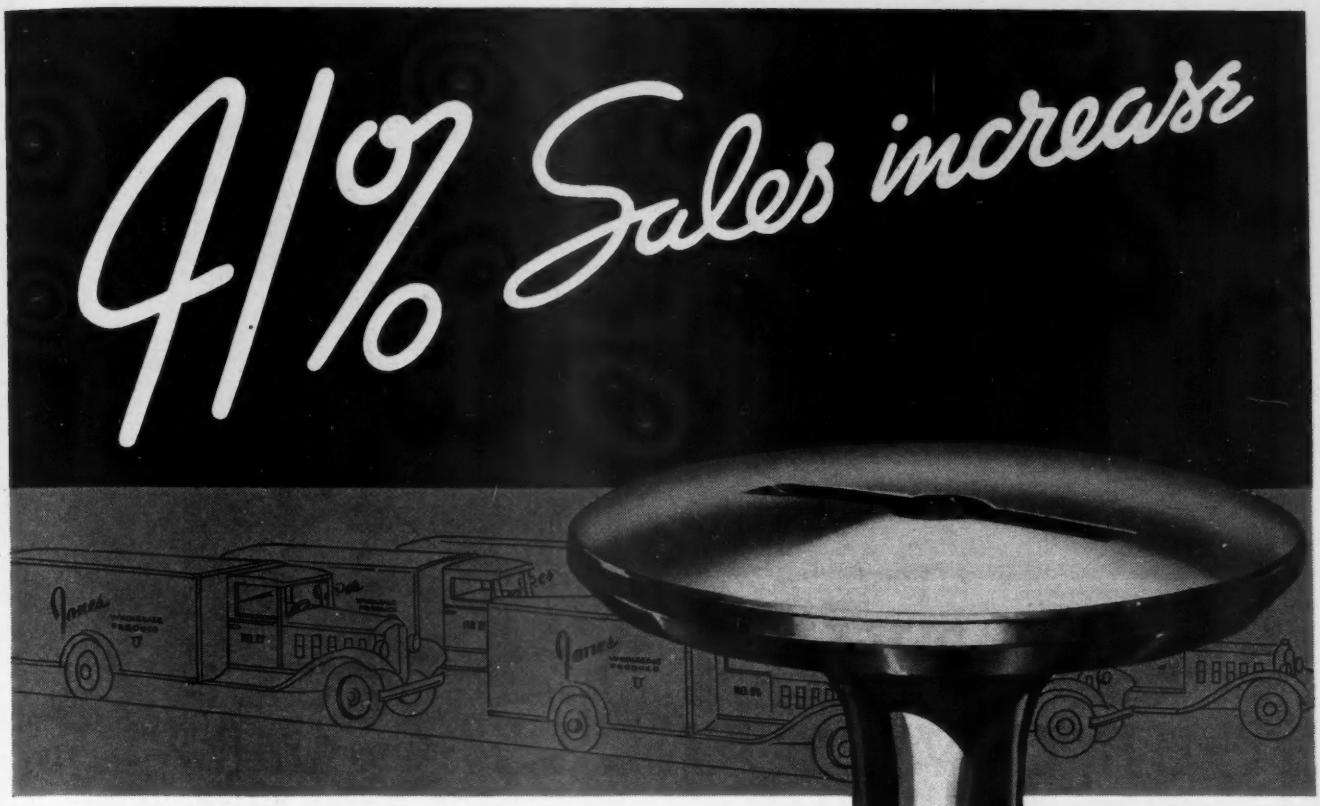
(The successful advertisement referred to above was written by Addison Vars, Inc., Buffalo, N.Y.)

COMMERCIAL CAR JOURNAL

A Chilton Publication

Chestnut & 56th Streets, Philadelphia, Pa.

41% Sales increase



shows what fleet operators think of the guaranteed valves

Last year, sales of Toledo truck and bus valves increased 41% over the year before. For better performance, for lower maintenance costs, more and more fleet owners are standardizing on Toledo Super-Forged *Guaranteed* Valves. It will pay you to equip your fleet with these superior valves. Your Toledo jobber carries a complete stock for your convenience and service.

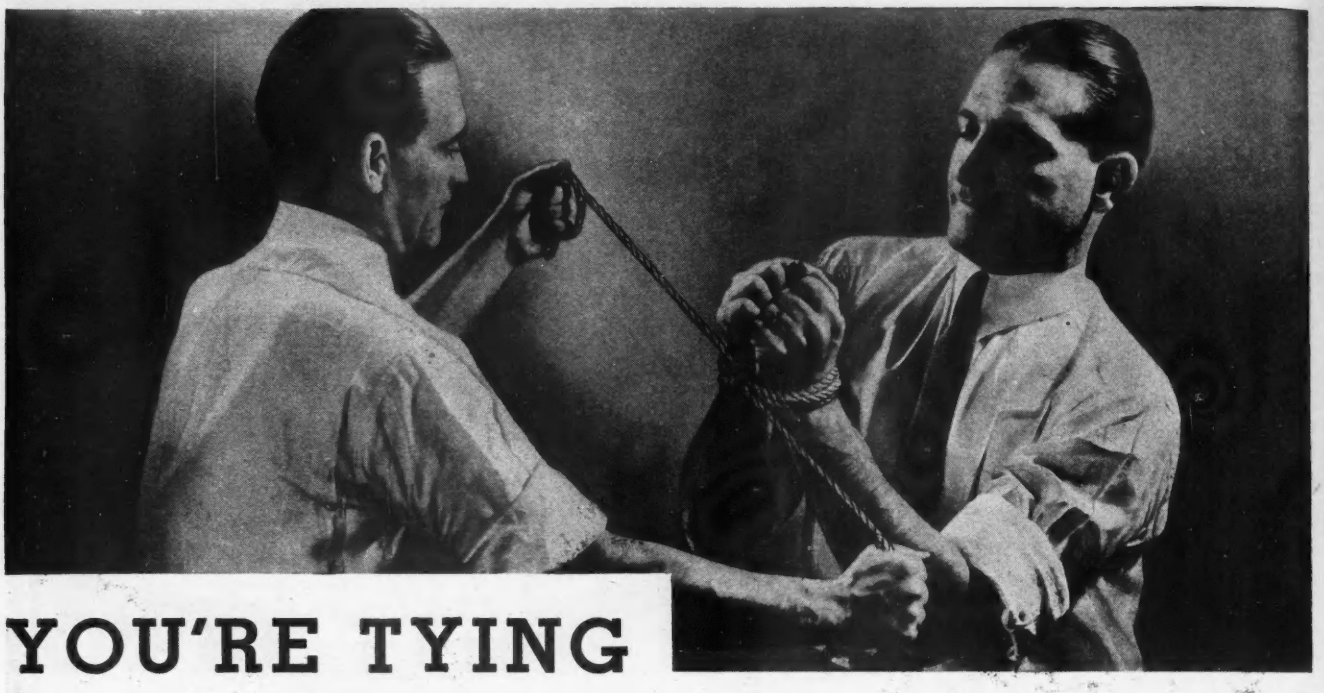
GUARANTEE

Toledo "Type S" Super-Forged Valves are guaranteed. Your Jobber will give you, without charge of any kind, a new valve in exchange for any Toledo "Type S" Super-Forged Valve which proves defective in service.

THE TOLEDO STEEL PRODUCTS COMPANY, TOLEDO, OHIO, U. S. A.

New York, 17 W. 60th Street • Chicago, 1225 South Wabash Avenue • Detroit, 5857 Forsythe • Atlanta, 279 Ivy Street, N. E. • Dallas, 2805 Commerce Street • Kansas City, 14th and Oak Streets • Los Angeles, 1341 South Hope Street • San Francisco, 528 Larkin Street • Portland, 408 N. W. 12th Avenue • In Canada: The Toledo Steel Products Company, Ltd., 14 Breadalbane Street, Toronto

TOLEDO



YOU'RE TYING YOUR OWN HANDS... if you don't get the full facts about

Edison SPARK PLUGS

25,000,000 Homes . . . and every one knows the name of Edison . . .

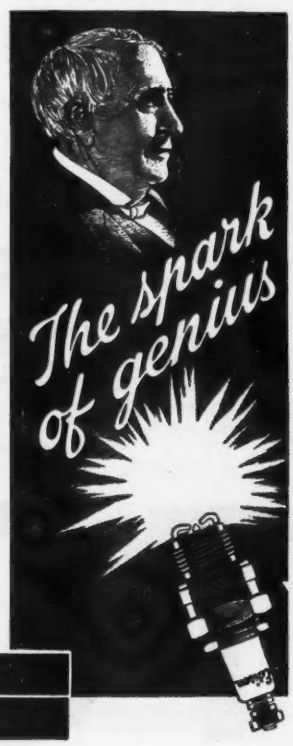
Lift the knocker—ring the bell—at any one of America's millions of homes. Ask the question—"Ever hear the name Edison?"—and you'll get *yes* for an answer every time! Everybody knows the name Edison—everybody immediately associates it with master achievements—and fleet owners the country over have complete confidence in the ability of Edison Spark Plugs to render super-service.

Here's what one user writes:

"On one of our highway routes we use an International A-4 Tractor, pulling heavily loaded trailers. This job runs about 250 miles a day and at rather high speed. Sometime ago we installed a set of Edison #40 Spark Plugs in this motor and they have operated without any trouble whatever.

"A few days ago we overhauled this motor and as is our custom, we installed new spark plugs and I am sending you the Edisons taken out of this job after 30,000 miles of good service. They are still in good operating condition, but thought you might be interested in having them. The new plugs we put in were Edisons and we are now using Edison 100%, for they give us about 15,000 miles more service than any other plug we have ever used."

So size up the situation—and draw your own conclusions. You're tying your own hands—if you don't get the full facts—*now!*



EDISON-Splitdorf Corporation
West Orange, N. J.

ONE OF THE Thomas A. Edison INDUSTRIES

The TORQUE-DISTRIBUTOR

LICENSED UNDER FRANK P. LAWLER PATENTS

EVERY TRUCK OWNER SHOULD KNOW These Facts!

Whenever the differential gear spins one wheel on a slippery spot, at least *50% of the PULLING POWER* of the driving axle is *LOST*, if both wheels have about the same amount of traction.

At times, this loss of *PULLING POWER*, due to the spinning wheel, can be as high as 90% (or even higher) if one wheel has considerably more traction than the other.

YOU CAN REGAIN this 50% to 90% *LOST* available *PULLING POWER* of your truck by installing a TORQUE-DISTRIBUTOR in place of the conventional differential gear, because the TORQUE-DISTRIBUTOR prevents the spinning of one wheel at any time.

The TORQUE-DISTRIBUTOR gives a *positive* two-wheel drive to any axle in contrast to the *NON-positive* drive of the differential gear. This results in ADDED SAFETY in accelerating and driving, just as four-wheel brakes have resulted in ADDED SAFETY in decelerating and stopping.

Write for complete information.
Correspondence from Dealers and Distributors invited.

THE TORQUE-DISTRIBUTOR SALES CO.
KOHL BUILDING, SAN FRANCISCO
(CHICAGO REPRESENTATIVE: STEVENS HOTEL)

Ford TRUCK REPLACEMENT UNIT

DRIVES ON BOTH WHEELS Always!

WALTER FOUR POINT POSITIVE DRIVE TRACTOR TRUCKS & SNOW FIGHTERS

High ground clearance and correct weight distribution have always been a feature of Walter Four Point Positive Drive Tractor Trucks and Snow Fighters.

The cab is set over the front axle and the motor is set ahead of the axle, giving ideal weight distribution and real accessibility. With this construction Walter Trucks can accomplish work that can not be done with other designs.

WALTER MOTOR TRUCK COMPANY 1001-19 Irving Ave., Ridgewood, L. I., N. Y.

WEAVER

STREAMLINED LO-HI-DRAULIC

JACKS

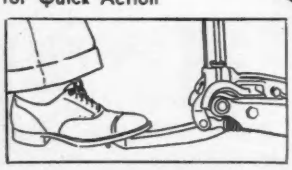
A complete new line including a range of sizes to meet every demand.

HANDY
4,000 lbs.
$37.50*

UTILITY
5,000 lbs.
$41.00*

SUPER
7,500 lbs.
$54.50*

WEAVER
FOOT PEDAL
for Quick Action



GIANT
20,000 lbs.
$129.00*

IMAGINE lifting a 3,000 lb. truck by simply pressing down a couple of times on the foot pedal of a Weaver LO-HI-DRAULIC Jack . . . You can, easily—and with a few strokes of the handle, the GIANT will raise 20,000 lbs.

These ultra-modern, quick acting, easy operating hydraulic jacks typify the advanced design and practicability that are characteristic of Weaver equipment.

A *patented* foot pump or pedal on LO-HI-DRAULIC models is an exclusive Weaver feature. Pedal saves time in raising saddle to the load, and is powerful enough to raise light cars without pumping the handle. Lo-Hi-Draulic Jacks have spring balanced long "T" handle, low saddle and shoulder—and lift to 24 inches. The entire hydraulic cylinder assembly can be quickly removed by taking out a few cotters and pins. Enclosed mechanism and leak proof construction are also features of these Jacks.

Complete details will be supplied upon request.

(*All prices slightly higher West of Denver)

WEAVER MANUFACTURING CO.
Springfield, Illinois, U. S. A.

If you want
STRENGTH
RIGIDITY
LIGHTNESS
SIMPLICITY
ECONOMY
in **YOUR** *axles —*

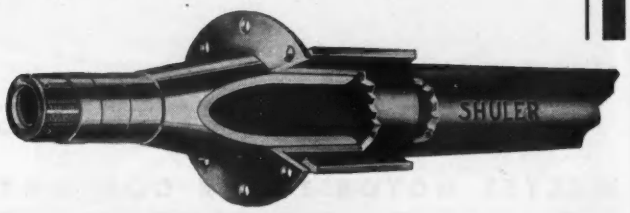
SHULER
TUBULAR TRAILER AXLES

are the answer

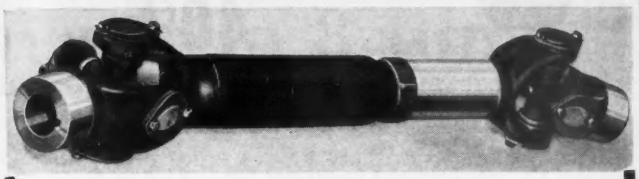
Made from heat-treated seamless steel tubing, to rigidly-controlled specifications. They are uniform throughout, since we do not weld a single part. Spring seats and brake flanges (cast integrally) are mechanically applied under pressure. We are equipped to fill orders of any quantity for any trailer or tractor. Also front axles for trucks and buses.

Put it up to us.

SHULER AXLE COMPANY, INC.
Louisville, Kentucky



BLOOD BROTHERS MACHINE COMPANY announce



New! "Series N"

Needle Bearing Joints

Four Sizes: 4N - 5N - 6N - 7N

Featuring:

1. SIMPLICITY
2. ACCESSIBILITY
3. ADAPTABILITY

The new BLOOD BROTHERS "SERIES N" has greater angularity, sealed lubrication, best grade alloy steels, greater torque capacity, longer slip action, true running assemblies and the most accurate workmanship possible in the industry today.

Our design is such that plain yokes can be used as easily, from an assembly standpoint, as flange yokes and companions. We are prepared, however, to furnish all conventional types of flange construction where required.

Our Engineering Department will be glad to make recommendations and quote prices on your requirements.

BLOOD BROTHERS MACHINE COMPANY

ALLEGAN MICHIGAN

SIMMONS Silver King HYDRAULIC JACKS

built for RUGGED SERVICE at lowest maintenance cost!

Silver Kings ask no favors and expect none. They're ruggedly built for rugged service and require no attention between jobs. Twenty-four hours a day — month after month — any Silver King is ready for any lifting job—and it will do that job quicker and easier than any other jack. Sixteen models serve every purpose. New five-ton and two-ton shop jacks offer unrivaled efficiency. Test, compare for yourself. You will standardize on SILVER KINGS.

SEND FOR COMPLETE CATALOG—FREE

THE SIMMONS Manufacturing Co.
3650 East 93rd St.
CLEVELAND, OHIO

___Please send me the complete Illustrated Silver King Hydraulic Jack Catalog.

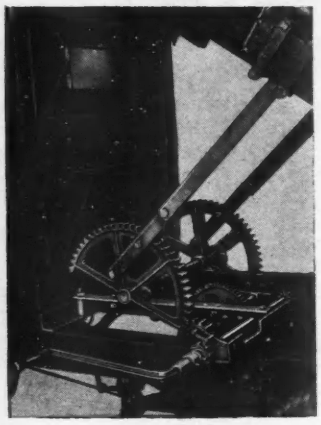
___Please send full description of the Silver King Floor Jacks.

Name _____

Address _____

City _____ State _____

There's a Profitable Waiting Market in YOUR Locality



for the

Little Giant

Heavy-duty

2-speed

Hand Hoist

It sells to

Farmers, Contractors, Factories, Coal and Lumber Dealers, Highway and Sanitation Depts.

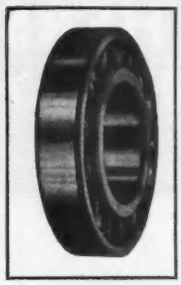
UNDER BODY TYPE

Also vertical types to sell as low as $49.50

Low price—less than half power-hoist cost—appeals to wide range of truck users. Fits any body or any popular make of chassis without alterations . . . dumps easily and quickly . . . to 55° angle and return in less than 2 minutes . . . locks at any angle . . . capacity 4 tons . . . easy to install . . . no upkeep expense . . . fully guaranteed . . . *good dealer profit.*

Write Today For Dealer Details

LITTLE GIANT PRODUCTS, INC.
1532 No. Adams St. Peoria, Illinois



Equal to the finest new bearings made

yet you save

40%

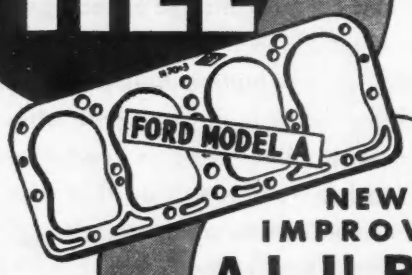
The fact that you pay 40% less for Ahlberg Ground Bearings doesn't mean sacrificing quality, performance nor dependability. They are built to new bearing standards, triply tested and service proven. Furthermore, they carry a new bearing guarantee and a twenty-six year old record of outstanding service and economy.

Write for "The Story of Ahlberg Ground Bearings" and address of nearest Ahlberg branch.

Ahlberg Bearing Company
321 East 29th Street, Chicago, Illinois

Ahlberg *Ground Bearings*
SERVICE PROVEN

FREE



NEW IMPROVED

ALUPAK

Head Gasket

Install it on your toughest job. Then let Alupak speak for itself! No cost —no obligation.

Mail for FREE SAMPLE

FELT PRODUCTS MFG. CO.
1518 CARROLL AVE.
CHICAGO, ILL.

FELT PRODUCTS MFG. CO.
1518 CARROLL AVENUE, CHICAGO, ILLINOIS

Please send me a FREE Alupak Head Gasket for

☐ Model A Ford
☐ Chevrolet _____ year _____ model
☐ Plymouth _____ year _____ model
☐ Aluminum Head ☐ Iron Head

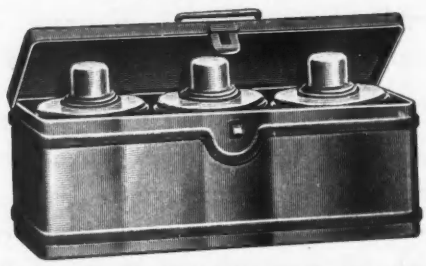
Name _____
Address _____
City _____ State _____
My Jobber's name is _____

SAMPLE

MAIL COUPON FOR FREE

APPROVED!

by state laws and by popular demand



COMMERCIAL VEHICLE FLARE

Model No. 600-3

THE most superior flare on the market—living up to all required specifications—and then some. Available in single units; two or three flares in metal container.

Write for details

Ready for you now: new copyrighted chart of state lighting equipment regulations.

THE K-D LAMP COMPANY
610-616 WEST COURT ST.,
CINCINNATI, OHIO

• • • This 6-wheel unit boosts the payload of a 1½-ton truck to 8 tons!

ACME SIX WHEELER

Make a husky, absolutely dependable six-wheel, 6-to-8-ton-payload truck from a 1½-ton four-wheel job. Every part is guaranteed for life! You can multiply profits. Converted truck is as easy to handle as the original—and economical too. Go after the extra-payload business. Get the complete facts now.

ACME SIX WHEELER CO.
CADILLAC MICHIGAN

Beaurline Fountain Brush
CUTS CLEANING COSTS 1/3 OR *Your* MONEY BACK –

More than 2000 fleet-owners now use this revolutionary Beaurline Fountain Brush for reducing equipment cleaning costs. This sensational new method loosens grit and grime, flushes it off and polishes all in one combined operation. Preserves finish. Makes old hand methods obsolete. No expensive maintenance or equipment. Quickest and most efficient method in the industry. Absolutely guaranteed to reduce your fleet cleaning costs of time and labor by 1/3—or your money refunded without question. Send for test sample immediately.

Easy to use. You slide water hose on end of rigid hollow 4-foot handle. (6-foot handle at 40c extra.) This mop of soft tough 4" bristles in cast aluminum head with scratchproof rubber guard provides gushing fountain. 20% more bristles on new model. Long life refills at low cost.

GET SAMPLE

List price $9.00. 20% discount to Fleet Owners. Send COUPON now for trial brush, $7.20.

SEND COUPON

CLIP HERE-NOW

BEAURLINE FOUNTAIN BRUSH CO.
1157 So. Wabash Ave., Chicago, Ill.

Enclosed find $7.20 for which please send me one of your Fountain Brushes and complete price quotations.

Name .....

Address .....

City .....State .....

Kingham UNIVERSAL

TRAILERS – BODIES
FOR ALL HAULING JOBS

BUY A FACTORY-BUILT UNIT TRAILER AND BODY

STRENGTH!
APPEARANCE!
TWO IMPORTANT FEATURES

SEE YOUR NEAREST DISTRIBUTOR OR WRITE FOR DESCRIPTIVE LITERATURE AND PRICES.

KINGHAM TRAILER COMPANY
Incorporated
15th & HILL STS. LOUISVILLE, KY.

Smoke

Smoke is sufficiently annoying and costly to the operator of a bus without the penalties that legislation may impose. Periodical exhaust gas analyses made with the Cambridge Exhaust Gas Tester while running on the road will give positive data for adjustment which will not only stop the expensive smoke nuisance but will also result in maximum economy and power. Because this instrument will withstand road shocks and pointer does not waver or jump it is just as readable and accurate on the roughest road as it is in the shop. Send for Booklet 144E.

11" x 8" x 8"—Wt. 29 lbs.

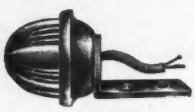
Cambridge Instrument Co., Inc.
3732 Grand Central Terminal
New York City

Pioneer Manufacturers of Precision Instruments

CAMBRIDGE EXHAUST GAS TESTER

TRUCK and BUS
SIGNALS AND SAFETY LIGHTS

1240 — Flush Type Clearance Lamps. Either Black or Chrome Finish. Extreme Height Only 1½ Inches.



1130 Regular Clearance Lamp

Two-Way Lamp. Made in 2 Styles

We Can Also Furnish Other Types of Clearance Lamps.

Triple Truck Lamps.

Reflex Devices, Mirrors, Etc.

Do-Ray Products Are Built to Last.

DO-RAY LAMP CO.

1458 SO. MICHIGAN AVE. CHICAGO, ILL.

I SEE TROUBLE IF YOU DON'T CLEAN OUT ANTI-FREEZE WITH

Sani-Flush

Get set for summer @ 6¢ per car

Overheated motors mean poor performance, costly repairs, delayed schedules. Get your fleet set for summer runs. Clean out anti-freeze, rust, scale, and sediment quickly and thoroughly. Use Sani-Flush.

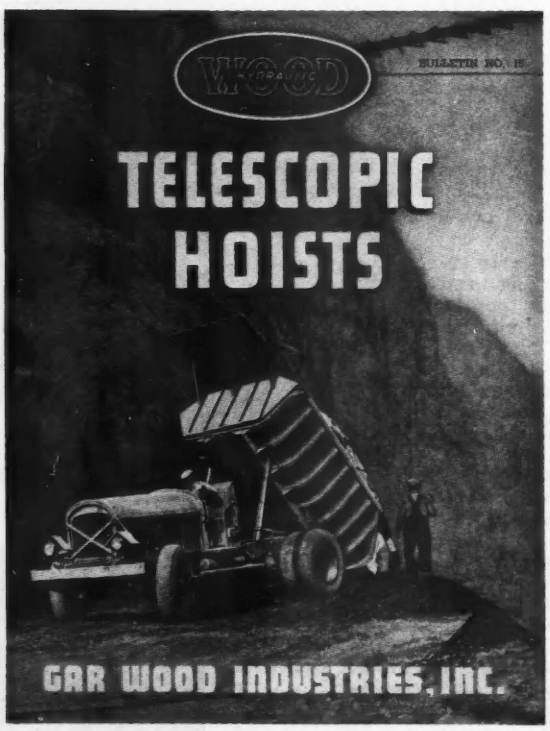
It does the job at an average cost of 6¢ per passenger car (15¢ for largest trucks, buses and tractors).

Sani-Flush is perfectly safe—not caustic. Cannot injure aluminum cylinder-heads, water-jackets or fittings. Sold in economical 25-lb. pails by grocery, drug and hardware stores and jobbers.

FREE SAMPLE: ***Write on your firm's stationery for a sample can of Sani-Flush. No obligation, of course.***

THE HYGIENIC PRODUCTS COMPANY

220 Seventh St., Canton, Ohio



WRITE FOR this NEW Bulletin!

A complete catalog of heavy duty telescopic units for trucks and trailers, just off the press.

GAR WOOD INDUSTRIES, INC.

DETROIT, MICHIGAN

Suggest to your Next Customer That He Use the

Commercial Car Journal Standard Cost System. A simple, convenient and inexpensive method of keeping close tabs on trucks and drivers.

It costs only $9.50 for 500 Driver's Cards, 60 Monthly Summary Sheets, 1 Complete Instruction Book, 1 Binder.

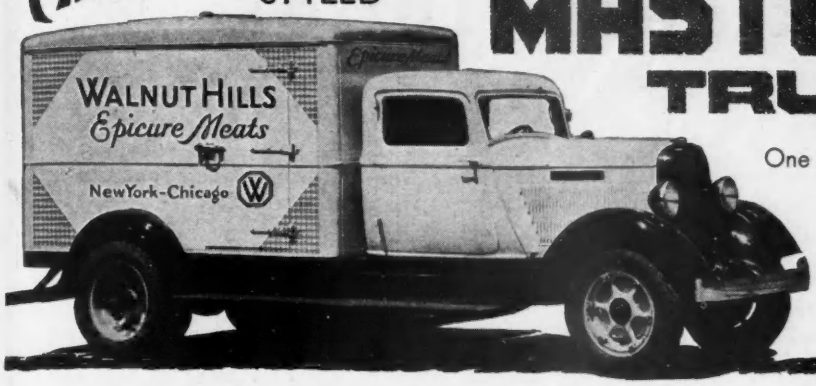
CHILTON COMPANY

Chestnut and 56th Streets

PHILADELPHIA, PA.

Another SPECIALLY STYLED

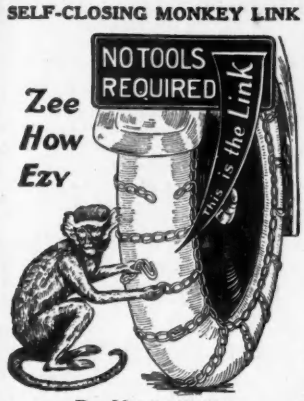
MASTERCRAFT TRUCK BODY



One of many styles built by us to individual specifications on a mass production plan. Result—Custom Truck Bodies for **your** needs at standard prices.

Luce Mfg. Co., Lansing, Mich.

SELF-CLOSING MONKEY LINK



Pat. No. 1 438,560
Trade Mark Reg. in U. S. Pat. Office

FREE Samples To Fleet Owners

Self-Closing Monkey Links

Write us for free samples and state how many trucks are in your fleet and what size they are. We will mail samples immediately.

Why Buy New Chains?
Repair With Monkey Links

Your chains aren't worn out when the cross links start to let go. Repair with Monkey Links. Your drivers can do it on the road. No tools required. No appreciable time lost. Chains as good as new. Save money. Increase safety. Send for your FREE SAMPLE now.

Flower City Specialty Co.
ROCHESTER, NEW YORK
At All Reputable Jobbers

TURNSIGNAL
ELECTRIC FLARE

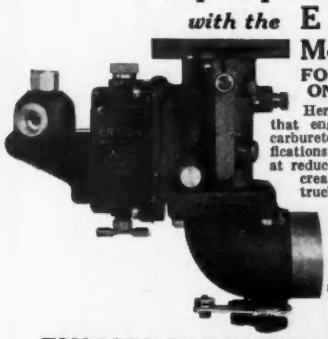
1. Dependably Sure
2. Does Not Deteriorate When Not Used
3. Generates Its Own Current
4. Unit Size 4 Inches by 3½ Inches
5. Reasonable Price

Watch for this trademark

TURNSIGNAL CORPORATION

400 E. Rittenhouse St. (Germantown), Phila., Pa.

Step-Up Truck Performance *with the* ENSIGN Model K CARBURETOR FOR ON *heavy-duty* SERVICE TRUCKS



Here's the carburetor to put new life beneath that engine hood—a rugged, compact, heavy-duty carburetor built to **extra-heavy-duty** service specifications for increased power and higher efficiency at reduced operating costs. It assures definitely increased utility and greater work capacity for trucks that make constant, extreme demands upon the **power source.** Easily attached and adjusted, built for extra hard service, extra long life—this carburetor is the product of years of highly specialized experience in the manufacture of precision carburetting equipment. Five up-draft sizes. Reasonably priced. Immediate shipment from three strategically located stocks. Write now for information, and name of nearest distributor.

ENSIGN CARBURETOR COMPANY, LTD.
—Manufacturers—
P. O. Box 606, Huntington Park, California
Chicago Branch—450 E. Ohio St., Chicago, Illinois
Mid-Continent Stock—114-116 E. Ninth St., Tulsa, Oklahoma

FLEET OPERATORS!

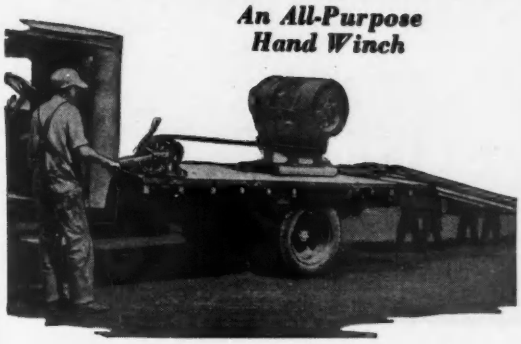
Investigate the new method of reducing cylinder wear and shortening time required for overhauls. These new piston rings of frictionless bearing-metal are saving truck owners big money everywhere. Write today for details.

SIMPLEX PRODUCTS SALES CORPORATION
1956 East 66th Street Cleveland, O.

SIMPLEX MOLIUM PISTON RINGS

HANDY HOIST POWER • SPEED • STRENGTH

An All-Purpose Hand Winch



A 5-ton Hand Hoist for trucks, trailers, wrecking cars, etc. Also suitable for structural erection, handling boilers, safes, machinery and other hoisting, hauling or lifting. All steel construction. Has two speeds, geared 4 1/3 to 1 and 23 to 1. Positive internal brake.

Cable drum is 5" in diameter and 8" long with flanges 3½" deep. It carries an evenly spooled 160 feet of ⅝", 250 feet of ½", 325 feet of 7/16" or 440 feet of ⅜" wire rope.

Compactly built, weighing only 125 lbs. Dimensions 16" x 20" x 13". Capacity 5 tons.

$75
Weighs only 125 lbs.

ALLOY STEEL & METALS CO.
1862 E. 55TH STREET
LOS ANGELES, CALIF.

Advertisers' Index

A

AC Spark Plug Co. 64
Acheson Colloids Corp. 117
Acme Six Wheeler Co. 127
Ahlberg Bearing Co. 126
Albertson & Co., Inc. 92
Algoma Plywood & Veneer Co. 112
Alloy Steel & Metals Co. 129
Alma Mfg. Co. 120
Aluminum Company of America 2
American Chain Co., Inc. 102
American Die & Tool Co. 68
Autocar Co., The 7

B

B & J Trailer Co. 111
Baker-Raulang Co. 120
Bear Mfg. Co. 91
Beaurline Fountain Brush Co. 127
Bendix Products Corp. (Stromberg Carburetor Division) 39
Black & Decker Mfg. Co. 96
Blackhawk Mfg. Co. 121
Blood-Brothers Machine Co. 125
Brown-Lipe Gear Co. 103
Burch Corp. 122

C

Cambridge Instrument Co., Inc. 127
Carter Carburetor Corp. 120
Champion Spark Plug Co. 52
Chevrolet Motor Co. ..... 3rd Cover
Commercial Car Journal, ... 100-104
Cummins Engine Co. 132

D

Delco Remy Corp. 72
DeVilbiss Co. 122
Diamond T. Motor Car Co. 69-70
Dietz, R. E., Co. 78
Ditzler Color Co. 81
Dodge Bros. Corp. ..... 2nd Cover
Do-Ray Lamp Co. 128
Dry-Zero Corp. 109
DuPont E. I. De Nemours & Co., Inc. 77

E

Eaton Mfg. Co. 97-98
Edison-Splitdorf Corp. 106
Edwards Iron Works, Inc. 124
Electric Storage Battery Co. 41
Ensign Carburetor Co., Ltd. 129
Exide Batteries 41

F

Federal-Mogul Corp. 114-119
Federal Motor Truck Co. 79-80
Felt Products Mfg. Co. 126
Firestone Tire & Rubber Co. 6
Fitzgerald Mfg. Co. 122
Flower City Specialty Co. 129
Ford Motor Co. 63
Fruehauf Trailer Co. 73

G

Gar Wood Industries, Inc. 128
General Motors Truck Co. 90
Gulf Refining Co. 45

H

Hall Mfg. Co. 120
Handy Governor Corp. 122
Hansen, A. L., Mfg. Co. 3
Hans Sattler 119
Haskelite Mfg. Corp. 121
Hays Corp., The 120
Hein-Werner Motor Parts Corp. 113
Hercules Motors Corp. 120
Hoof Products Co. 66-67
Hygienic Products Co. 128

I

International Harvester Co. of America, Inc. 8

K

K-D Lamp Co. 126
Karpex Mfg. Co. 119
Kingham Trailer Co., Inc. 127

L

Laminated Shim Co., Inc. 119
Larkin Co., Inc. 111
Lathan Co., Inc. 94
Little Giant Products, Inc. 126
Long Mfg. Co. (Division of Borg-Warner Corp.) 131
Luce Mfg. Co. 129

M

Mack Trucks, Inc. 50-51
Marmon-Herrington Co., Inc. 119
McKay Co., The 121
Met-L-Wood Corp. 110
Meyercord Co. 84-85
Motor Improvements, Inc. 87

N

National Machine & Tool Co. 120
Nichols-Lintern Co. 101

O

Oshkosh Motor Truck, Inc. 120

P

Packard Electric Corp. 99
Parish Pressed Steel Co. 48-103
Perfection Steel Body Co. 76

R

Reo Motor Car Co. ..... Front Cover
Rinshed-Mason Co. 119

S

Salisbury Axle Co. 103
Service Recorder Co. 71
Sherwin-Williams 83
Shuler Axle Co., Inc. 108
Simmons Mfg. Co. 125
Simplex Products Sales Corp. 129
Skinner Purifiers, Inc. 43
Spicer Mfg. Co. 103
Sponge Rubber Products Co. 121
Standard Oil Co. (Indiana) 47
Standard Spark Plug Co. 123
Sterling Motor Truck Co., Inc. 122
Stewart Motor Corp. 88-89
St. Paul Hydraulic Hoist Co. 122
Stuart, D. A. & Co. 65
Studebaker Sales Corp. of America ..... Back Cover

T

Texas Co., The 4-5
Thompson Products, Inc. 86
Thornton Tandem Co. 121
Timken Roller Bearing Service & Sales Co. 120
Toledo Steel Products Co. 105
Torque-Distributor Sales Co. 107
Transportation Engineers, Inc. 82
Truck Equipment Co., Inc. 118
Turn Signal Corp. 129

U

United American Bosch Corp. 95
United States Asbestos Div. of Raybestos-Manhattan, Inc. 49
Universal Parts, Inc. 122

V

Victor Mfg. & Gasket Co. 93

W

Walker Mfg. Co. 120
Walter Motor Truck Co. 107
Watkins Babbitting Service 114
Watson Co., H. S. 109
Waukesha Motor Co. 1
W. G. B. Oil Clarifier Co. 121
Weaver Mfg. Co. 108
Wittek Mfg. Co. 122

The new Long Clutch has won Preference in the Automotive Industry because of its Better Performance and Greater Dependability

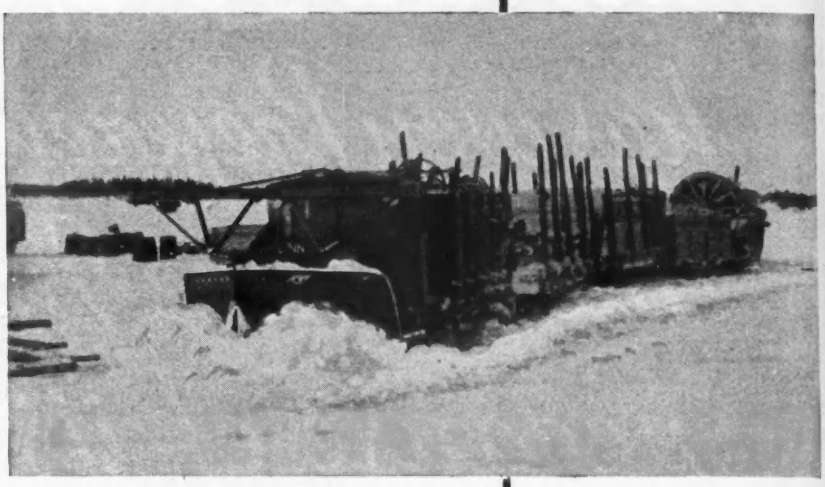
LONG

LONG MANUFACTURING COMPANY, DETROIT

LONG MANUFACTURING COMPANY, LIMITED, WINDSOR, ONTARIO

DIVISION OF BORG-WARNER CORPORATION

Read the record



No trouble starting Cummins-Diesel at 40° below zero

The God's Lake Gold Mines, Ltd., use a Cummins-Diesel powered Linn Tractor to haul supplies from their base at Ilford to God's Lake, Manitoba. The temperatures vary from 40° above to 40° below zero. The tractor must break its own road, pull a 67-ton pay-load, and carry sufficient fuel for a round trip which averages more than 100-hours.

In spite of the severe weather conditions, they report: "The Cummins-Diesel gave *no trouble of any kind.*"

Due to the high cost of both gasoline and oil, in this section of Manitoba, fuel economy is doubly important. Here the Cummins again demonstrated its superiority by saving more than 7c per mile in operating cost as compared with a gasoline-powered tractor.

You may never be faced with such severe sub-zero temperatures as those under which this tractor is called upon to operate, but it is a satisfaction to know that your Cummins-Diesel will start instantly in the coldest weather, without the use of glow-plugs, gasoline in any form, compression releases, or combustion chamber adapters.

There is a Cummins dealer near you. Talk with him today. Ask him about the Cummins *cold-starting* Diesel, or write direct to Cummins Engine Company, 101 Wilson Street, Columbus, Indiana.

Every fleet operator owes it to himself to send for this new book, "*Read the Record.*" It tells the whole Cummins-Diesel story.

CUMMINS
AUTOMOTIVE · INDUSTRIAL AND MARINE
DIESELS

COMMERCIAL CAR JOURNAL

FEBRUARY 1936

...trated—Reo 3JR 6-wheeler Dump, of 6 tons ...city. Six units like this are included in the ... of 31 Reos owned by the Blue Diamond ...oration Limited, one of the largest build- ...materials producers on the Pacific Coast.

...—Typical views of Reo Speed Wagons ... in "tough" construction jobs in all parts of ...orld.

BUY "AMERICA'S TOUGHEST TRUCK" FOR AMERICA'S ROUGHEST HAULING

Few trucks can stand the gaff of construction work—with its steady grind of hauling capacity loads over rough trails and by-roads.

That is why, throughout the country, on big construction projects and in the service of the Federal Government and states and municipalities, you will see Reo Trucks assigned for the heaviest tasks.

Choose Reo—America's Toughest Truck—for work of this kind, and you will soon discover that Reos stay in service, month in and month out, without breakdowns or costly repairs.

Whether you select a Reo powered with the famous Gold Crown Engine or the new Silver Crown Engine, you can definitely count on long life and maximum performance at lowest cost per mile. Ask your nearest Reo dealer about the Reo performance Guarantee which now protects every Reo user.

REO MOTOR CAR COMPANY
LANSING, MICHIGAN

Now on Display A SENSATIONAL RECORD-SMASHING NEW LINE OF 1936 DODGE TRUCKS

With

New "FORE POINT" Load Distribution That Sets a Record High in Hauling Efficiency

With

"PRE-PROVED" ECONOMY... Engine Advancements That Tests Have Shown Set Records for Gas and Oil Savings

With

Many Other Advancements Destined to Make This 1936 DODGE Set An All-Time Record for Operating and Upkeep Economy

Above... Dodge 1½-Ton, 6-Cyl.—136" W. B. Stake... $690*— Dodge gives you these amazing 1936 advancements in a complete line of trucks to take care of practically any hauling or delivery need. Before you buy any 1936 truck, see your Dodge dealer. 1936 Dodge trucks lead the field by a wider margin than ever . . . but they're still priced with the lowest!

This engine will save big money on gas and oil! Dodge alone of the lowest-priced three has 4 piston rings. Dodge has full-length water jackets, spray-cooled exhaust valve seats, aluminum alloy pistons, and many other features that cut costs.

"Fore Point" weight distribution saves money. In the 1936 Dodge trucks, the load has been moved farther ahead with respect to axles—thus increasing hauling efficiency and saving tire wear.

DODGE, for years the economy leader among trucks, again leads for 1936 with the most amazing group of money-saving advancements in truck history. Dodge "Pre-Proved" engine economy alone for 1936 indicates gas savings of up to $95 a year! "Fore Point" load distribution is a tremendous step ahead in increased hauling efficiency. Genuine hydraulic brakes save money on tires, brake relining and adjustments. Get a copy of the 1936 "Show-Down" Score Card from your Dodge dealer. It gives you comparative facts about all three lowest-priced trucks in plain black and white. See him today!

STILL PRICED WITH THE LOWEST

½-TON CHASSIS—6-CYL.—116" W.B.

**List prices at factory, Detroit, subject to change without notice. Special equipment, including dual wheels on 1½-ton models, extra.*

Through the Official Chrysler Motors Commercial Credit Company New 6% Time Payment Plan you will find it easy and less costly to arrange time payments to fit your budget.

DODGE

Division of Chrysler Corporation

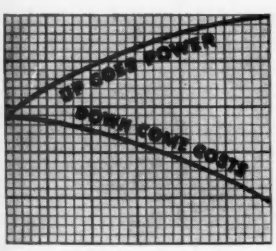
$370*

1½-Ton Stake (131-inch and 157-inch wheelbase)

CHEVROLET

announces the most powerful and the most economical Chevrolet trucks ever offered to

TRUCK FLEET OWNERS



CHEVROLET introduces a new 1936 series of half-ton and 1½-ton trucks. They are the most powerful Chevrolet trucks ever built. They are the most economical Chevrolet trucks ever built. They are the most ruggedly constructed Chevrolet trucks of all time.

These new Chevrolet trucks are equipped with perfected hydraulic brakes . . . the safest ever developed. The famous Chevrolet high-compression valve-in-head engine develops tremendous power. It performs under all speed and load conditions with remarkable economy. In every feature and detail—frame, axles, springs—there is extra strength, designed for dependable service over an extra long period of time.

You are urged to inspect these new trucks and witness a demonstration of their ability. And before you select any truck, get the *facts* on operating costs. Find out how and why these new Chevrolet trucks will save you money and increase your operating profit.

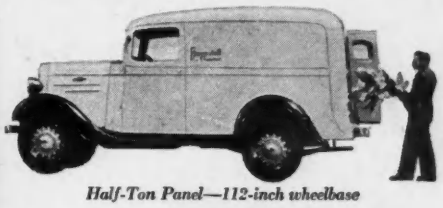
CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN

CHEVROLET
A GENERAL MOTORS VALUE

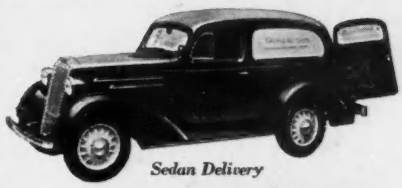
NEW PERFECTED HYDRAULIC BRAKES
always equalized for quick, unswerving, "straight line" stops.

NEW HIGH-COMPRESSION VALVE-IN-HEAD ENGINE with increased power, increased torque, greater economy in gas and oil.

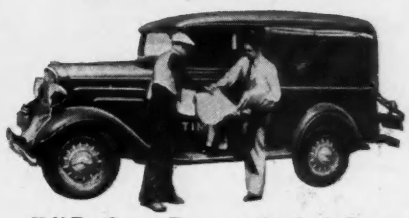
FULL-FLOATING REAR AXLE
with barrel type wheel bearings on 1½-ton models.



Half-Ton Panel—112-inch wheelbase



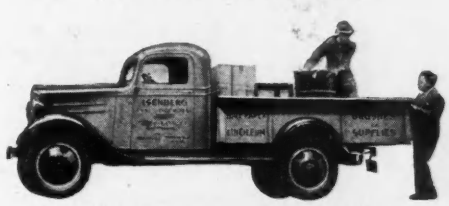
Sedan Delivery



Half-Ton Canopy Express—112-inch wheelbase

Half-Ton Pick-Up with Canopy—112-inch wheelbase

1½-Ton Panel—131-inch wheelbase



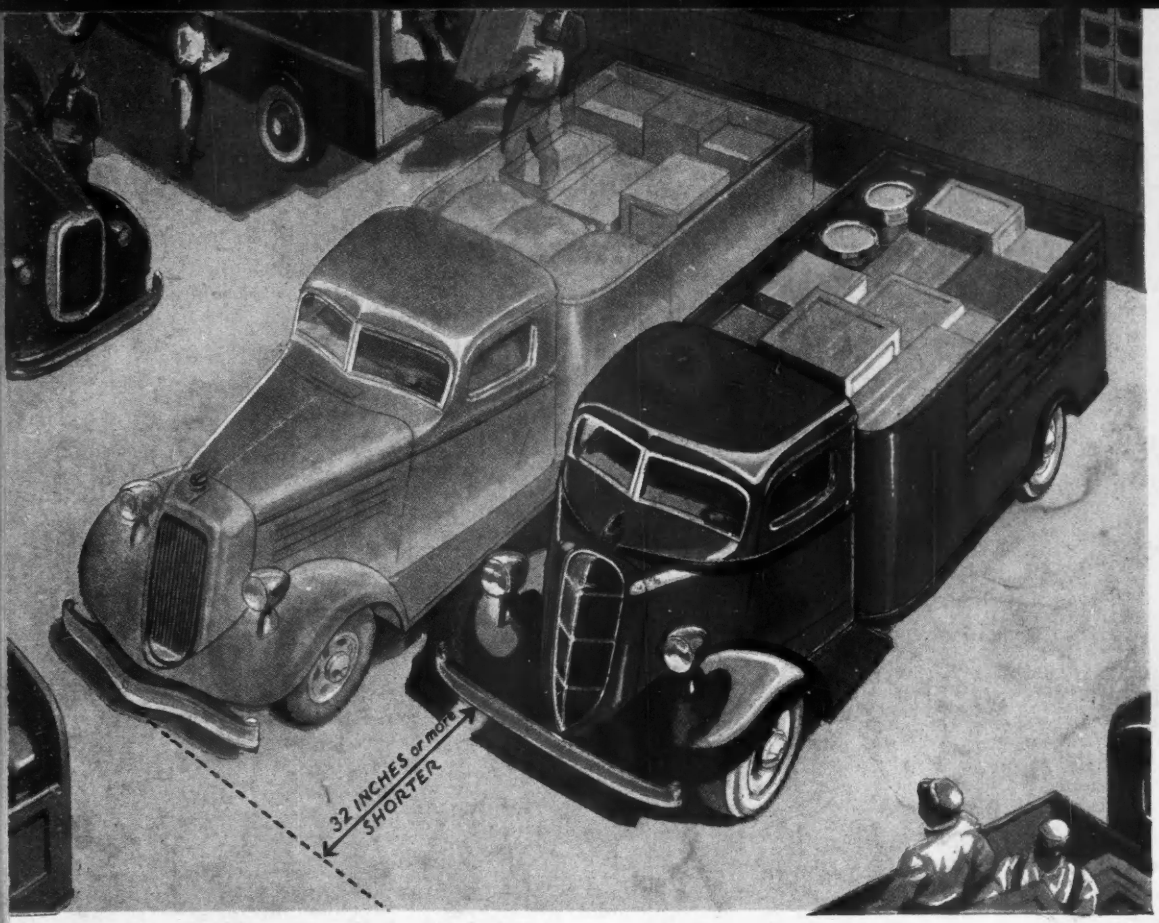
1½-Ton Open Express—131-inch wheelbase

1½-Ton Canopy—131-inch wheelbase

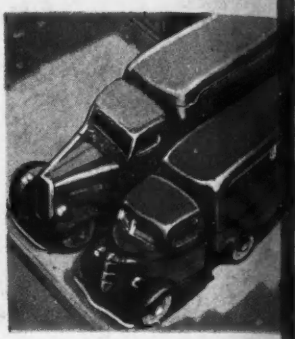
1½-Ton Truck—for trailer operation

6% NEW GREATLY REDUCED G.M.A.C. TIME PAYMENT PLAN

The lowest financing cost in G.M.A.C. history. Compare Chevrolet's low delivered prices.

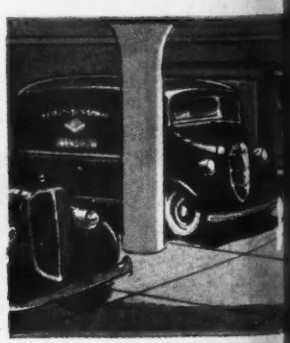


As high as 30 per cent shorter t… radius! The answer to 1936 … crowded into 1836 streets and … Your compact Studebaker truck g… and out where ordinary trucks ca…



32 to 40 inches shorter overall length… and more states are restricting t… trailer length. Studebaker keep… well inside any reasonable limi… length, without sacrificing pay…

"Tailor-made" for narrow drive… alleys! Fuel delivery, for instanc… unhandy places, is greatly speed… More trips per day! Many forme… ry-ins" changed to quick spout deli…



Less Garage Space Needed! An ene… amount of tedious backing and … saved—which means fuel savin… and time saving. Easy mane… saves damage to fenders and to pa…

For close quarters…and close budgets!

NEW METRO SERIES "CAB-FORWARD" TRUCKS

LESS turning space—less parking space—less garage space—less room in traffic—needed for these new-day Studebaker "cab-forward" Metro Series motor trucks!

Studebaker stamina is another reason. Heavy-duty quality begins with powerful 6-cylinder *truck* engines and is plainly evident through the whole chassis and cab! Prices are lower than any truck of this type has ever carried before.

Studebaker "cab-forward" design saves up to 40 inches in overall length and permits a vastly shorter turning radius. It answers the vital need for *handier* trucks in today's fast and thick traffic. They get in and out like an eel. The perfect units for city hauling—for delivery in narrow streets and alleys—for street and highway work, for construction jobs, for orchard and farm service, for inter-city hauling. Studebaker Metro models cut overall tractor-trailer length to the minimum—a distinct legal advantage in a great many states.

Studebaker Trucks priced from

$565

upward, chassis at factory

Call your Studebaker truck dealer and ask him to explain the unique, money-saving advantages of Studebaker Trucks. The Studebaker Standard Series, too, are far more compact than usual. THE STUDEBAKER CORPORATION, *Truck Division,* South Bend, Ind.

STUDEBAKER

FOREMOST IN TRANSPORT SINCE 1852